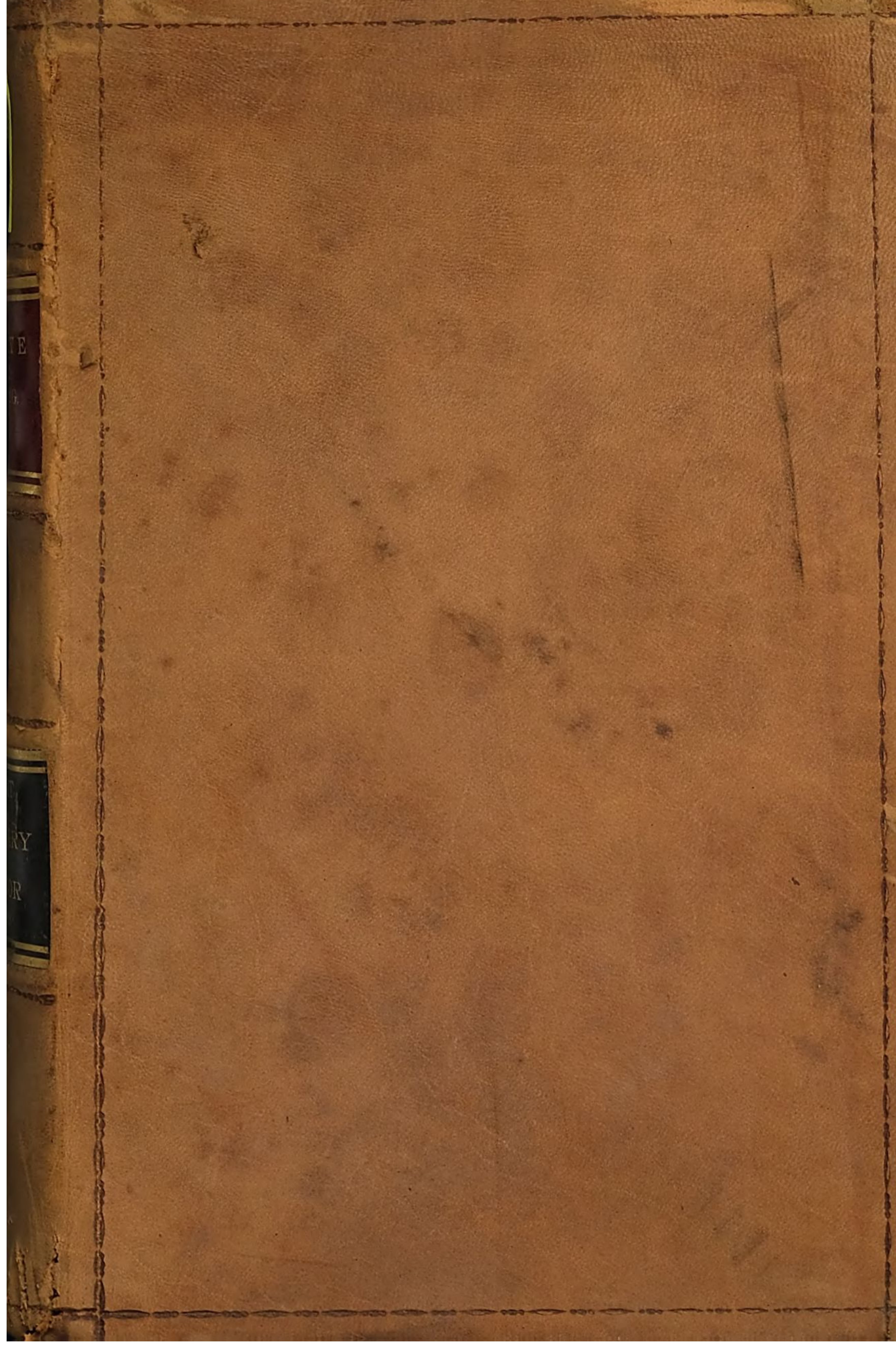




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REPORT

OF THE

SECRETARY OF THE INTERIOR;

BEING PART OF

THE MESSAGE AND DOCUMENTS

COMMUNICATED TO THE

TWO HOUSES OF CONGRESS

AT THE

BEGINNING OF THE FIRST SESSION OF THE FIFTY-FIRST CONGRESS.

IN FIVE VOLUMES.

VOLUME III.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1890.

ANNUAL REPORT

OF

THE COMMISSIONER OF PATENTS.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, September 16, 1889.

SIR: I have the honor to submit the following report of the business of this office for the fiscal year ended June 30, 1889:

Applications for patents received	36,740
Applications for design patents received	808
Applications for reissue patents received	101
Applications for resigtration of trade-marks received	1,281
Applications for registration of labels received	772
Caveats received	2,345
Total	42,047
Number of patents granted, including reissues and designs	21,518
Number of trade-marks registered	1,111
Number of labels registered	312
Total	22,941
Number of patents withheld for non-payment of final fees	2,858
Number of patents expired	11,920

RECEIPTS AND EXPENDITURES.

Receipts from all sources	\$1,186,557.22
Expenditures (including printing and binding, stationery, and contingent expenses)	999,697.24
Surplus	186,859.98

BALANCE IN THE TREASURY OF THE UNITED STATES ON ACCOUNT OF THE PATENT FUND.

June 30, 1888	\$3,337,666.65
June 30, 1889	186,859.98
Total	3,524,526.63

COMPARATIVE STATEMENT.

Date	Receipts.	Expenditures.
June 30, 1885	\$1,074,974.35	\$970,277.58
June 30, 1886	1,206,167.80	991,829.41
June 30, 1887	1,150,046.05	981,644.09
June 30, 1888	1,122,994.83	953,730.14
June 30, 1889	1,186,557.22	999,697.24

INCREASE IN THE NUMBER OF APPLICATIONS FOR PATENTS, INCLUDING REISSUES, DESIGNS, TRADE-MARKS, AND LABELS.

June 30, 1885.....	35,688
June 30, 1886.....	38,678
June 30, 1887.....	38,408
June 30, 1888.....	37,769
June 30, 1889.....	39,702

• NUMBER OF APPLICATIONS AWAITING ACTION ON THE PART OF THE OFFICE.

July 1, 1885.....	5,786
July 1, 1886.....	6,772
July 1, 1887.....	7,601
July 1, 1888.....	7,227
July 1, 1889.....	7,073

From the foregoing it will be seen that the total number of applications received, including designs, reissues, etc., was 42,047; that the number of patents granted was 22,941; that the total receipts were \$1,186,557.22; that the total expenditures were \$999,697.24, leaving a surplus of \$186,859.98 to be turned into the Treasury of the United States to the credit of the patent fund; and making a total balance in the Treasury on account of the patent fund of \$3,524,526.63.

CONDITION OF BUSINESS.

At the close of the fiscal year 1888-'89 the business of the Patent Office was in a satisfactory condition as compared with former years. The examinations of applications for patents carried on in twenty-four of the thirty examining divisions had been brought up to within two months of that date, and of the remaining six divisions one-half were less than three months in arrears. I find in the Commissioner's report for the fiscal year ending in 1887 the statement that the condition of the work in the Bureau then existing would compare favorably with any previous year, coupled with the statement that only one division was in arrears over six months and only seven exceeding three months. It will be observed that the present condition is still more satisfactory. It is believed, however, that the arrears in work in all the divisions can be practically done away with at an early date through the cordial co-operation of the force with the efforts of the Commissioner.

• THE NECESSITY OF ADDITIONAL ROOM.

That the work of the office may be promptly dispatched, it is indispensable that more room and better facilities should be provided. I can add nothing upon this subject to what has been urgently said by my predecessors, except to allude to representative instances, showing the crowded condition of the rooms in which the work is sought to be accomplished. The room occupied by Division XXVIII has nineteen by twenty-three feet of floor space.* In it are nine desks, occupied by nine men and women. In addition to the desks are book and file cases arranged against the wall and extending upon all sides of the room. In the room occupied by Division V the floor space is thirty-five by twenty feet in extent. In it are ten desks, occupied by ten persons. Book and file cases extend around the room on every side. These instances differ only in degree from nearly all the rooms devoted to the business of this Bureau. I share in the belief entertained by Commissioner Hall that the saving which would be effected by supplying the Patent Office with sufficient room and adequate conveniences, accompanied by the suit-

able re-arrangement of the location of the divisions with reference to each other, would be sufficient to pay the rental for a building adequate to the needs of an entire bureau.

LEGISLATION.

It is, I believe, generally conceded that legislation is needed amendatory of the Revised Statutes relating to patents. Some of the provisions which should be altered are section 4885, relating to the date of patents; section 4887, relating to the duration of patents for inventions previously patented in a foreign country; and section 4936, relating to re-imbursement of moneys paid by mistake into the Treasury. Other sections could be amended to the advantage of the patent system. More specific suggestions will be made upon this subject in my report to Congress. The opinion is indeed gaining ground that a revision of the patent act would be of advantage not only to the inventor but to the public generally.

DECISIONS OF FEDERAL COURTS.

An opinion has found expression that the policy of the Patent Office in adjudicating upon questions arising in the granting of patents should conform more nearly to the decisions of the Federal courts. There can be no doubt of the correctness of this view, and accordingly it would be wise for Congress to require the clerks of the Federal courts to furnish certified copies of all decisions and opinions in patent causes for publication in the Official Gazette.

COMPENSATION OF PRINCIPAL EXAMINERS.

I cannot close this report without directing attention to the fact that some of the employes of this Bureau are grossly underpaid. The most conspicuous instance of this character is the compensation of Principal Examiners. The Revised Statutes fix the salaries of these officers at \$2,500 per annum. This sum was established by Congress in the year 1848 (9 Statutes at Large, 231). It has never been increased. On the contrary, the amount appropriated for a number of years has been \$2,400.

These examiners are experts of the highest order. Their duties call for superior legal ability. As heads of divisions they must have executive capacity. They frequently resign their positions for the simple reason that they can do better for themselves in a private capacity. Two have resigned for that reason since the present Commissioner assumed office in April last. I believe that a public sentiment has at last developed that will sustain Congress in providing that the Principal Examiners of the Patent Office shall be fairly and fully paid.

Very respectfully, your obedient servant,

C. E. MITCHELL,
Commissioner.

The SECRETARY OF THE INTERIOR.

REPORT
OF THE
SUPERINTENDENT OF CENSUS.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
Washington, June 30, 1889.

SIR: I have the honor to submit the following report of the operations of this office:

Congress, by act of March 1, 1889, provided for taking "the eleventh and subsequent censuses," and April 17 of the same year the President appointed the present Superintendent, who qualified April 20.

For a number of years previous to the organization of this office Mr. James H. Wardle, of New York, in what was known as the Census Division of the Interior Department, had charge of all matters appertaining to the termination of the Tenth Census. The Superintendent, on assuming control of the office, recommended the assignment of Mr. Wardle as chief of division, since which time he has been employed in the capacity of acting chief clerk.

Other appointments have been made from time to time as need for additional help has arisen.

On April 25 Mr. Josiah C. Stoddard was appointed disbursing clerk, this office having been specially provided for in the law. May 17 Dr. John S. Billings, surgeon, U. S. Army, was appointed, without compensation from this office, to take charge of the compilation of the Vital Statistics of the Eleventh Census. June 1 Mr. Henry Gannett, of the U. S. Geological Survey, was appointed geographer, without salary; and on the same day Mr. William C. Hunt, formerly of the Massachusetts Bureau of Statistics of Labor, was appointed special agent at \$6 per day. Other appointments have been made as follows:

Two chiefs of division, at \$2,000; one stenographer, at \$2,000; two clerks of class four; three clerks of class two; two clerks of class one; four copyists, at \$900; twenty-eight computers, at \$720; two watchmen at \$720; one assistant messenger, at \$720; two laborers, at \$600; one messenger-boy, at \$400; and one charwoman, at \$240.

This force has been engaged on six classes of work, viz: (1) preparing for the enumeration next June; (2) sending out the preliminary schedules for said enumeration; (3) planning and arranging for the special investigations provided for by law; (4) collecting certain classes of statistics for the census year and for the calendar year; (5) completing arrangements to obtain, for census purposes, statistical data now available from various sources; and (6) preparing the preliminary schedules

to secure data for the census year which begins June 1, 1889, and for the several intervening years since 1880.

In making preparations for the enumeration, it was found advisable first to subdivide the several States and Territories into supervisors' districts. This required considerable correspondence and care, as the success of the enumeration will largely depend upon a satisfactory division of the territory of the United States into the one hundred and seventy-five districts provided by law. The corrections incident to this preparatory work not infrequently involve elaborate correspondence with each of the three thousand or more county clerks throughout the United States. The districting of the several large cities into convenient divisions alike for the enumeration and for the purposes of the report on Vital Statistics, likewise requires a large amount of correspondence.

By "special investigations" is meant all those inquiries which do not strictly belong to the enumerators' schedules, and which, under the act of 1889, may be withdrawn from those schedules, and committed to the charge of experts and special agents. Beside the inquiries authorized by the law of 1879, an additional special inquiry is demanded by the act under which the Eleventh Census will be taken, relating to the statistics of the recorded indebtedness of private corporations and individuals. In the preparation of the branch of the work relating to special subjects, it has been found necessary to consult with experts, in different parts of the country, who have made life-time studies of these topics. The aim of the office will be to keep strictly within the requirements of the law, and at the same time to determine as early as possible the best methods for prosecuting the special work. This has also added to the correspondence of the office, and many conferences have been had with specialists.

In some cases it was necessary to send out preliminary schedules, as, for example, to postmasters, with the request that the names be furnished of the physicians and insurance companies receiving mail at post-offices. This has been done with a view to enable the office to prepare lists of physicians and of insurance companies to receive the census schedules. The returns heretofore made by the enumerators in regard to births and deaths have been very inadequate, and the only check as to their correctness will be lists of the deaths which have come under the physicians' immediate knowledge during the census year secured directly from them.

It has also been decided to collect the statistics relating to the public indebtedness of the United States for each of the years intervening between 1880 and 1890, and the schedules for this purpose are nearly ready.

The law provides that, in cases where it is difficult to obtain the reports for the census year, such reports "shall be of and for the fiscal year * * * having its termination nearest the 1st of June, 1890;" and that the Superintendent "shall also at the time of the general enumeration herein provided for, or prior thereto, as the Secretary of the Interior may determine, collect the statistics of and relating to the recorded indebtedness of private corporations and individuals." In accordance with this provision, it has been thought wise to collect the statistics of recorded indebtedness, as of June 1, 1889; of fish and fisheries, of mines and mining, and of express and insurance companies for the calendar year ending December 31, 1889. With a view to pushing these investigations as rapidly as possible, considerable preparatory work has been done, as already decided upon in consultation with the Secretary of the Interior.

For comparative purposes the reports of other countries on vital statistics, municipal finance, and other subjects are of value, and through the co-operation of the State Department efforts are now being made to secure information of this character.

As the Eleventh Census will require nearly forty thousand enumerators, besides the supervisors and a large clerical force, the general correspondence of the office has been enormous, and has required the employment of a considerable number of persons from the beginning to arrange the thousands of applications which have been received from all parts of the country, and answer the letters which have literally poured in during the last two months.

The following is a financial statement to June 30, 1889:

Financial report to June 30, 1889.

Appropriated	\$1,000,000.00
Amount disbursed to June 30, 1889	9,965.49
Balance unexpended	990,034.51
Amount disbursed for—	
Salaries of employés	7,181.85
Traveling expenses of agents and employés	192.33
Rent	162.85
Stationery	998.17
Furniture and general supplies	1,430.29
Total	9,965.49

DISBURSEMENTS IN DETAIL.

April pay-roll	\$302.75
May pay-roll	2,368.05
June pay-roll	4,341.70
Laborers for temporary services, moving records, etc	169.35
Total	7,181.85

Very respectfully,

ROBERT P. PORTER,
Superintendent of Census.

The SECRETARY OF THE INTERIOR.

REPORT

OF THE

SUPERINTENDENT OF CENSUS.

DEPARTMENT OF THE INTERIOR,
CENSUS OFFICE,
Washington, November 6, 1889.

SIR: I have the honor to report as follows relative to the operations of this office since June 1, 1889:

The work of organizing and preparing for the forthcoming census of the population, wealth, and industry of the United States has been continued, and every effort has been made to complete the arrangements for the count of the people next June and to map out and start all the special inquiries which, under the act of March 1, 1889, are demanded of this office. The necessity of immediately providing office accommodation for a force which will continue to increase until it reaches a maximum of 2,000 persons has been met, and leases have been made for the building on the corner of Third and G streets at \$6,000 per annum, and an adjoining building, to be erected under the direction of the Superintendent, and to be ready for occupancy March 1, 1890, at an annual rental of \$6,500; also a building 108 feet by 38 feet and six stories high on the west side of Ninth street, between E and F, at an annual rental of \$12,000, to be completed and ready for use July 1, 1890. In each instance a yearly lease has been made, at the expiration of which period the Census Office can give up any or all of these buildings or retain such portions thereof, at a pro rata rent, as may be needed to finish the work.

In this way provision has been made for the great expansion of the office force next year and early in 1891, and for the rapid decrease of the number of clerks employed which will follow the completion of the count of the population. It will also do away with the annoyance and expense arising from the occupation, as in 1880, of a number of small buildings in various parts of the city.

FINANCIAL REPORT.

The total expenditure of the office to October 31 has been as follows:

For salaries of office force	\$41,031.85
For furniture and fittings	6,067.51
For miscellaneous expenses, which include rent, stationery, printing, fuel, gas, telegraphing, etc	11,777.60
For per diem of special agents	6,071.00
For traveling expenses of special agents	1,224.04
For miscellaneous expenses of special agents	1,384.83
Total	67,556.83

EMPLOYÉS AND EXAMINATIONS.

The total number of employés, including special agents and clerks not stationed in Washington, is at the present time 210. These employés have been appointed by the honorable the Secretary of the Interior on the recommendation of the Superintendent, in accordance with the rules governing appointments in the Census Office approved by the Secretary and promulgated August 3, 1889. The examinations required by these rules are not competitive, but simply a test of the qualifications of such candidates only as may be designated for examination by the Superintendent of Census. All persons who may be employed as special agents or statistical experts, and clerks transferred or detailed for service in the Census Office from existing branches of the civil service who have passed a satisfactory civil-service examination or were in the classified departmental service prior to July 16, 1883, as also applicants who have passed a satisfactory civil-service examination or were competent and trustworthy clerks or employés of the Tenth Census of the United States for a period of at least six months, are not required to submit to an examination as to qualifications prior to appointment if so recommended by the Superintendent of the Census. At the same time it is a matter which was left optional with the Superintendent as to whether or not in some cases persons who have passed a civil-service examination shall be re-examined by the board of examiners of the Census Office.

Prior to the appointment of the board of examiners of this office 73 appointments, including that of the Superintendent, had been made; of this number 30 were chiefs of divisions, statistical experts, watchmen, assistant messengers, laborers, and others, who under the law and the ruling of the Department were exempt from examination. Of the remaining 43, 16 passed a civil-service examination and 5 served in the Tenth Census, leaving of those subject to examination 22, who were appointed without examination. The number of appointments since the formation of the board of examiners has been 137. Of this number 21 were special agents, 3 chiefs of division, and 20 watchmen, laborers, and others exempt from examination. Of the remaining 93 subject to examination, 69 have passed a satisfactory examination of the board of examiners, 11 passed the civil-service examination, 3 were transferred, 6 were employed in the Tenth Census, and 4 were examined by special agents. The employés may thus be recapitulated: Exempt from examination, 74; without examination, 22; civil-service examination, 27; Census-Office examination, 69; Tenth Census (except exempts), 11; examined by special agents, 4; transfers (except exempts), 3; total number of employés, 210.

WORK OF THE BOARD OF EXAMINERS.

Since the appointment of the board of examiners the total number of applicants examined has been 157, of which number 30 failed to pass. The questions are in the nature of those used in the business of the census, but are less difficult than the actual work. The examinations have proved an undoubted success, and have not only enabled the office to judge of the general fitness of the applicant for the work, but have aided the Superintendent materially in assigning clerks, after appointment, to the particular divisions where they are most likely to perform efficient work. No person is ordered for examination unless in the judgment of the Superintendent, after an examination of the formal

application, preliminary papers, and oftentimes a personal interview, it is believed some aptitude for census work exists. In recommending clerks for appointment the endeavor has been to adhere to a fair system of apportionment for the several States.

It is believed, in view of the temporary character of the employment and the necessity, as the work progresses, of appointing large numbers of clerks for terms of three and six months, that the method inaugurated by the office and approved by the Secretary of the Interior will not only bring the best work and leave the Superintendent free to act with great rapidity when the demand is greatest for clerks, but is in the line of practical civil-service reform. The aim will be to gradually create an eligible list, from which clerks, when wanted, may be drawn at a few hours' notice. The examinations have been conducted with absolute impartiality, and the grade of clerks, thus secured will compare favorably with that of any other department of the public service.

PRINTING, ENGRAVING, AND BINDING.

Section 20 of the act provides for the expenses of the Eleventh Census and for the preliminary printing, engraving, and binding. Under the ruling of the Treasury Department these expenses must be paid out of the general appropriation for printing and binding of the Interior Department. The cost of the preliminary engraving and binding of the Tenth Census was \$250,000; and as the funds thus required for immediate use can not be taken out of the amount fixed for taking the Eleventh Census, additional legislation, appropriating a sum of not less than \$350,000 for this purpose, is necessary to relieve the immediate wants of this office and to furnish the necessary money to defray the cost of the preliminary printing, engraving, and binding of the Eleventh Census.

It is the intention of the Superintendent to publish census bulletins containing results of the work as rapidly as possible. The first of these bulletins has already been issued, and the second, relating to the products of the fisheries of the United States, will soon be out. The expense of this important work, together with the other printing, engraving, and binding necessary in the prosecution of the work, can not under the aforesaid ruling be defrayed from the general appropriation: hence the urgent necessity of additional legislation.

NECESSITY OF PROMPT PUBLICATION.

In referring to the delays in printing the census returns my distinguished predecessor, General Francis A. Walker, said in a report to the honorable Secretary of the Interior, December 1, 1881:

Every year and every month, therefore, which can be saved in the compilation and publication of the census statistics adds appreciably to their value. I will not say that the country could well afford to pay largely for thus hastening the promulgation of the results of the census, but rather that the country could on no account afford to allow any delay therein beyond the time absolutely necessary to secure careful revision and a correct compilation of those results. In fact, however, when the saving of the general expenses of the office is taken into account, a prompt compilation and an early publication of the census statistics secure an actual economy of expenditure. In this view the work of this office will be pressed forward with the utmost energy until it is brought to a full completion. And in order to attain the earliest practicable publication of results I have the honor to recommend that Congress be asked to authorize the printing, by special contract, under the supervision of the honorable Secretary of the Interior (and, if it be thought desirable, also of the Printing Committees of the two houses of Congress), of the several reports of the census as fast as prepared.

I renew this recommendation, with the additional statement that experience in the printing and publishing of the Tenth Census makes it imperative, in order to secure prompt publication, that the Census Office exercise control over the final preparation of the reports. The pressure in the Government Printing Office is enormous; every department is clamoring for early work. Through no fault whatever of that office delays are unavoidable. The prompt publication of the census reports is of vital necessity to the country, and yet it is impossible to get them out rapidly if they are obliged to take their turn in the Government Printing Office.

Several important reports of the Eleventh Census will be ready for publication during the fall and winter of 1890, and it would afford much gratification to the country and lift the cloud of delay which has settled on this office if they could be pushed through the press with all the expedition which belongs to private enterprise.

The map work and much of the engraving for the census must be done by private contract, and if authority were granted this office either to print by private contract or to print and publish its own reports the Eleventh Census volumes would not wearily drag their way through the Government Printing Office, as did those of the Tenth, the last volumes issuing after the Eleventh Census was organized. The purchase at a small cost of the census printing establishment, now in active operation in this office, will save thousands of dollars and expedite the work to an extent that would be hardly credited by those unacquainted with the working of a census office. In the opinion of the Superintendent, if the Census Office could control the reports until they are ready for the document-room an enormous saving of money would be effected and prompt publication insured. Such a course would settle the question of responsibility for delay, which is difficult to ascertain under the existing system.

As will be seen from the subjoined references to the various divisions of the Census Office, the work has been thoroughly mapped out, and in every branch it is not difficult to observe indications of success. Those in charge of the work this year will undoubtedly profit by the experiences of the Tenth Census. As nearly all the statistical experts and chiefs of divisions were trained in that census, it will be a comparatively easy matter to avoid many of the mistakes of ten years ago. If this question of the printing and publishing of the final reports could only be settled satisfactorily, and the Census Office be absolutely independent of other departments, there is reason to believe that both statistically and in promptness of publication the Eleventh Census will be a success.

THE COUNT OF THE PEOPLE.

Underlying all preparations for the work of counting the people is the division of the country into suitable supervisors' districts, the apportionment of rates of compensation of the supervisors and of the enumerators, and the preparation of complete and correct lists of the counties by minor civil divisions and the municipalities of the country for the guidance of the supervisors in making districts for enumerators, and for the guidance of the office in compiling the population and other statistics. With the exception of the determination of the rates of compensation of enumerators, which is at present under discussion, all the items of work above enumerated have been completed.

In accordance with the provision of the act, a division of the country

into supervisors' districts has been made, and the result printed in Census Bulletin No. 1, already issued by this office.

Besides these matters of preparation for the count of the population—a considerable amount of work, preliminary in its character, relating to the discussion of the relations of population and mortality to geographical conditions has been done. The special items referred to are the distribution of population in latitude and in longitude, the determination of the center of population, the distribution of population by drainage basins and in accordance with temperature, rain-fall, elevation above sea-level, and certain topographical features. This work, now in progress, is to be carried forward as far as possible prior to the enumeration. The well-known geographer, Mr. Henry Gannett, chief topographer of the United States Geological Survey, with Mr. George B. Chittenden as chief of division, has charge of this work, which necessarily includes a considerable amount of drawing and preparation of maps for other divisions, and has kept several draughtsmen continuously employed. This latter class of work is likely to increase in the future as more information is obtained for compilation and the general plans of the work become further amplified.

THE POPULATION SCHEDULE.

The population schedule has been prepared, and such changes as the act of March 1, 1889, makes necessary, together with some changes that have been deemed of value by the Superintendent, have been made. The present act differs from that of 1879, inasmuch as it requires an inquiry as to the number of negroes, mulattoes, quadroons, and octoroons, and questions to elicit this information have therefore been prepared for the population schedule. The other additional inquiries proposed are as follows:

Can the person enumerated speak English? If not, indicate the language spoken. (To be asked concerning all persons ten years of age and upwards.)

How many years have you been in the United States? Have you been naturalized? Have you taken out naturalization papers? (These three questions to be asked concerning adult males of foreign birth only.) Mother of how many children, and number of these children living? (To be asked concerning all women who are or have been married.)

With these changes the schedule will be substantially the same as that employed in the Tenth Census.

General Francis A. Walker's efforts to improve the returns in relation to occupation in 1870 and 1880 were undoubtedly great and in the right direction, and it will be the endeavor of the office to make the Eleventh Census in this respect still more compact and complete. While it will be the aim of the office to secure as elaborate and detailed a classification of occupations as practicable to meet the well-defined desire on the part of the public for full information concerning the occupations of the people, great care will be used not to lose sight of broad distinctions in attempting a more subtle discrimination. In some of the recent attempts at detailed classifications this value has been diminished by subdivisions to a point that has lessened the usefulness of the returns.

In the same way there is room for improvement in the general classification of places of birth, and in condensing the number of classes given the distinctive divisions of race have in no case been lost sight of.

The question of using what is known as the family schedule has been carefully considered, and its advantages over the large-sized

schedule heretofore used in the national censuses, are undoubtedly great. The adoption of the family schedule will unquestionably increase the cost of printing, but, in view of the fact that a small-sized schedule can be used to much greater advantage as a "prior" schedule and thereby increase the accuracy of the enumerator, it may be advisable to adopt it.

METHOD OF TABULATION.

Another important question to be considered in conjunction with the enumeration is the method of tabulation. In compliance with a suggestion made to the Superintendent of Census by the Secretary of the Interior, a committee, consisting of Dr. John S. Billings, surgeon U. S. Army, Henry Gannett, and William C. Hunt, were appointed by the Superintendent to thoroughly investigate the several systems of tabulation, including those of Mr. Herman Hollerith and Mr. Charles F. Pidgin.

This committee, in conjunction with the Superintendent of Census, has made a careful examination into the different methods of tabulating the various branches of census returns. While the final report in relation to the tabulation of the population statistics has not yet been made, enough has been seen of the working of the Hollerith machine to recommend that this system be employed for tabulating the statistics of death for the forthcoming census. The adoption of this system will greatly facilitate the completion of the mechanical portion of the work of the census, and will enable the office to use a much larger proportion of the clerical labor in calculating percentages and ratios, thus facilitating the presentation of the results of the enumeration. It will not, however, dispense with the labor of clerks so much as it will render the same more efficient and available for the intellectual work of the census.

It will also enable this office to make valuable compilations which in former censuses were neglected, because by the ordinary methods such compilations were impossible on account of the time and expense involved. It will, in short, make practicable a more thorough analysis and discussion of the returns of the enumeration of the Eleventh Census than would be possible under the old method, and thus make known the practical results of the enumeration more speedily than heretofore.

VITAL STATISTICS.

Next in importance to the count of the people come the vital statistics and the statistics of the special classes; for after we know the number of our population, its characteristics, distribution, and parentage, the question of its health and physical condition naturally comes up for consideration. The Census Office was fortunate, therefore, in securing the services of that eminent authority on all matters appertaining to vital statistics, Dr. John S. Billings, surgeon U. S. Army, whose report for the Tenth Census was far in advance of anything ever attempted in this direction before.

The great importance of complete and accurate records of vital statistics, including marriages, births, and deaths, is becoming more and more recognized in this country. Such records are the absolutely necessary foundation for well-directed attempts to improve the health and lengthen the life of the people; to increase the productive efficiency of the workers; to form a sound basis for the enormous money interests

involved in the business of life insurance, and for other purposes vital to the health and well-being of the population.

The great majority of the States have still no satisfactory system of registration, although most of them are slowly being improved in this respect. At the time of the last census there were but two States, Massachusetts and New Jersey, whose records of death were considered sufficiently complete and accurate to warrant their acceptance as a part of the data of the census. Since that time the death records of the States of Vermont, New Hampshire, Connecticut, and the greater part of the State of New York have been so improved that it is hoped they will be found sufficiently complete for the calculation of reliable death-rates. Great improvement has also been made in the records of Alabama and Minnesota, and while it is not proposed to rely entirely upon these records, it is believed that they will be of great value in perfecting the vital statistics of those States.

The amount of information with regard to deaths secured at the last census by the voluntary aid given by physicians throughout the country in the preparation of registers of deaths occurring in their practice or coming under their notice was so great that it has been thought best to continue this system. Accordingly 80,000 registers of this kind have been issued to physicians in all parts of the country where there is no satisfactory registration of deaths, and the response of the medical profession to this appeal for assistance has been most gratifying. Many letters have been received from physicians offering co-operation and asking for copies of the register, and the medical journals and medical societies of the country of all schools have urged their readers or members to aid in this matter.

In addition to this a special effort is being made to perfect the records of the births and deaths occurring among the colored people throughout the country by the issue to colored clergymen of small registers similar to those prepared for the use of physicians, with the request that they be filled up and returned to this office at the close of the census year.

In Alabama the State health officer and the members of the State Medical Society, who have charge of the registration of births and deaths in that State, are making special efforts to secure absolutely complete returns for the census year; so that there is good reason to hope that we shall have complete returns of the vital statistics of at least one Southern State to compare with the records of those Northern States which have a satisfactory system of registration.

The most important new features of work in this direction are as follows:

- (1) A special study of the birth and death rates and of the principal causes of death in twenty-four of our largest cities, to show where the highest and lowest death-rates prevail, and what the relations of these are to topography, drainage, character of habitations, overcrowding, poverty, and other environments.

- (2) A special study of the influence of race upon fecundity and mortality in the United States, including studies of the birth and death rates of mulattoes as distinguished from the negroes on the one hand and the whites on the other, and of the principal European races which have contributed to the population of this country.

- (3) A special study of the relations of occupation to death-rates and to particular causes of death, as shown by a detailed study of figures derived from the records of our largest manufacturing cities for a period of five years, in addition to the data of the whole country for the census year which will be obtained by the enumerators.

STATISTICS OF SPECIAL CLASSES.

Closely connected with the vital statistics of the country is the subject of the statistics of those classes of the people who are more or less disabled by physical and mental infirmity, and therefore require either constant special care on the part of the States or special means for education. These classes include the insane, the idiot, the blind, and the deaf. After conferences with physicians and teachers specially familiar with the needs of these special classes schedules of queries and a system of investigation have been agreed upon, which, it is believed, will lead to a more accurate determination of the number of these unfortunate persons in the several States and cities of this country than has been heretofore obtained, and also to a determination of the relative importance of certain alleged causes of these disabilities, together with statistics of the various special institutions, asylums, schools, etc., devoted to the care or education of persons belonging to these classes.

STATISTICS OF CITIES.

The progressively greater increase of population in the cities, as compared with that of the rural districts, and the results produced by the aggregation and overcrowding of large numbers of the poorest and most ignorant classes, including many recent immigrants, give a special importance to a study of the conditions as to water supply, sewerage, and drainage, character of habitations, etc., of the cities, taken in connection with the statistics of the diseases and deaths occurring in them in different localities. It is therefore intended to make a careful study upon all these points, to obtain as full information as possible with regard to all the conditions affecting the life and health of the people in the several cities of the United States, and to present these in a series of tables so constructed as to indicate the localities where the greatest injury to health and waste of life are occurring, and the conditions of habitation, occupation, municipal sanitary condition, etc., to which these may be supposed to be due, as a foundation for effort in a definite direction to effect improvement in these matters. This inquiry will be of a purely statistical character, and will in no instance cover the ground attempted in the similar investigation of the Tenth Census.

MENTAL AND MORAL CONDITIONS.

Under the generic term of mental and moral conditions, and following closely in point of importance the statistics relating to health and physical conditions, come the statistics of public schools, churches, and pauperism and crime.

The failure of the elaborate plan of the Tenth Census for the collection of statistics of education, churches, and libraries throughout the United States naturally indicates that a more modified inquiry is necessary to insure success. The statistics of education have been placed in charge of Prof. James H. Blodgett, of Illinois, whose life long experience as an educator and five years' service in census work have thoroughly equipped him for this duty. A simple plan has been adopted, which will include the most vital information relating to our public and private elementary, secondary, and superior schools. The co-operation of the Bureau of Education has been sought and courteously granted, and it is hoped that satisfactory results will be reached.

STATISTICS OF EDUCATION.

It is the purpose of this office to secure a full statement of the financial condition of our public-school system, which has a direct value to the tax-payer. The finances of private and parochial schools are intricate and of more remote public importance, and it is not deemed practicable to spend the time and money that would be needed to secure even an imperfect showing of the finances of such schools.

An attempt will be made, however, to obtain to the fullest possible degree a showing of the forces engaged in education in the great groups of public, private, and parochial schools, and a showing of the pupils and students taught by their combined effort.

Tables are to be prepared showing, as far as possible, the local conditions of each class.

A feature of the census will be the enumeration of pupils under occupations, from which columns or tables will be prepared showing who attended school, as reported by the patrons.

The public-school system is adjusted to a plan of reports to such an extent that the difficulties of approximating a correct showing are less than in the case of parochial schools. The parochial schools, however, are under a system of control that enables something to be done in grouping the total effectiveness. The most serious difficulty is anticipated in securing complete returns of private schools, many of which are transient and isolated in their existence and without any identity with any general system of records.

The accuracy of summaries upon this class of schools, often of small value singly but of considerable worth when aggregated, must be greatly determined by the interest of those who know the schools.

CHURCH STATISTICS.

The special inquiry relating to church statistics has been placed in the hands of Dr. Henry K. Carroll, who for many years has been a leading authority in the country on this subject. The scope of the inquiry will be limited to—I, organizations or societies; II, church edifices; III, seating capacity; IV, value of church property, and, V, communicants.

The Census Office believes earlier and more satisfactory results will be secured by limiting questions to the above mentioned subjects. After deliberation it was decided that it would be unwise to attempt to include in the enumerators' schedule inquiries relating to churches, and the office will therefore depend upon special agents and the various denominations themselves for sources of information. Nearly all these denominations report annually full and accurate statistics covering three out of the five questions proposed. The other facts will be secured by the aid of schedules sent from this office to special agents. An appeal has been made through the newspapers of the country to religious denominations, and the interest manifested in this work would indicate that the bureau will secure complete replies to the five questions referred to above.

LIBRARIES.

The subject of libraries is very fully and minutely treated year by year by the Bureau of Education, and it is not clear that in the brief time that could be devoted to the subject under the census results could be reached more ample than those already secured.

PAUPERISM AND CRIME.

Mr. Frederick H. Wines, who has been for more than twenty years secretary of the Illinois State Board of Public Charities, and who had charge in the last census of the statistics relating to the defective, dependent, and delinquent classes, embodied in the 21st volume of the Census Reports for 1880, will collect the statistics of crime and pauperism. The plan submitted by him has been approved by the Superintendent. With reference to crime, it includes a survey of the machinery (1) of arrest, namely, the police and the constabulary; (2) of conviction, namely, courts having criminal jurisdiction; (3) of incarceration (the main branch of the inquiry), or the prison and the prisoner; (4) of release from prison. Under this last head Mr. Wines will discuss mortality in prisons, pardons, paroles, and State or private agencies for the aid of discharged prisoners. Together with the prisons, the institutions for the custody and reformation of juvenile delinquents will be considered. It is believed that the officers in charge of penal and reformatory institutions will take sufficient interest in the inquiry to furnish to the Census Office complete information respecting the inmates of these institutions on the 1st of January, 1890, and, if not disappointed in this expectation, the work of tabulating the general results can be pushed in advance of the taking of the census (June 1, 1890), so that it is *his* hope and intention to give them to the public during the summer of 1890. Concerning pauperism, the report to be prepared will deal with its total cost and with paupers supported in almshouses, but not with out-door paupers, who can not be found by the enumerators, nor their number and location ascertained by any other practicable method. Since much of the relief given to the poor is by private charity, a census will be made of private benevolent institutions of all descriptions for children, the aged, the homeless and destitute, etc., and of their inmates.

VETERANS OF THE WAR OF THE REBELLION.

Section 17 of the census law provides, among other things—

That said Superintendent shall, under the authority of the Secretary of the Interior, cause to be taken, on a special schedule of inquiry, according to such form as he may prescribe, the names, organizations, and length of service of those who had served in the Army, Navy, or Marine Corps of the United States in the war of the rebellion, and who are survivors at the time of said inquiry, and the widows of soldiers, sailors, or marines.

Under this provision, as will be seen, a special inquiry is contemplated. While this matter has not been definitely determined upon, a schedule embracing the facts called for will probably be prepared, which will include questions in relation to the name, organization or organizations, date of enlistment, date of termination of enlistment (and there may be two or more enlistments and in more than one organization), length of service (in months), and disability incurred. An interesting feature in connection with this special inquiry is the number of volumes required to make the report. The results will fill eight quarto volumes of a thousand pages each, the size of the population volume of the Tenth Census.

WEALTH, DEBT, AND TAXATION.

The report on valuation, taxation, and public indebtedness in the United States, compiled for the Tenth Census under the direction of the present Superintendent of Census, was in advance of anything ever

attempted before by the National Government. At the same time this report fell far short of the ideal which the compiler had hoped to attain.

In the published record of investigations, forming Volume VII of the Tenth Census reports, an official statement was made for the first time of the assessed valuation of real estate and personal property in counties, cities, towns, and other minor civil divisions, and the State, county, city, and town taxation for schools and other purposes was also shown in the same detail. Another important feature, not previously included, was the presentation of tabular exhibits showing the bonded debt, floating debt, gross debt, sinking fund, and net debt of counties, townships, boroughs, cities, towns, villages, and school districts.

A complete statement of local affairs throughout the States and Territories for the Eleventh Census can not be made without dealing extensively with the question of local finance. This is now being done in the wealth, debt, and taxation division, under the superintendence of Mr. T. Campbell-Copeland.

Within the twelve months now ensuing a series of comprehensive tables giving the assessed valuation and taxation in all counties and other minor civil divisions for 1889-'90 will be ready for issue. Above the figures for those years will appear those of 1879-'80, for ready reference. The bonded debt, floating debt, sinking fund, and other resources of all minor civil divisions will be stated in such a manner as to show the financial condition of every county, city, town, and village at the end of each fiscal year since 1880.

The assessed valuation and financial condition of counties in 1889-'90, as compared with 1880, will be given separately by counties and by States. The assessed valuation, taxation, and financial condition of States in 1889-'90, as compared with 1880, 1870, 1860, and 1850, will be exhibited alphabetically and in geographical groups.

A confusing diversity of systems now existing in the management of municipal financial affairs has been prominently brought to notice in various quarters during the past few years. The general public can find nothing reliable to inform them on the subject. There is and always has been an impression that similar methods of adjusting corporate accounts exist in all cities and large towns. As a matter of fact, outside of statutory provisions, no two cities are exactly alike. These provisions, too, vary in every State and Territory. So it is also in the general administration of local government considered apart from finance.

To deal effectively with finances, securing at least uniform classification of receipts and expenditures for general information, two schedules are now being prepared, after mature deliberation and consultation personally or by letter with several eminent statisticians, including Professor Richard T. Ely, Herbert B. Adams, and Henry B. Gardner, Messrs. David T. Wells, Albion W. Tourgee, William O. Cole, Edward Atkinson, James M. Bugbee, and others.

In 1880 a table of receipts of cities of 7,500 population and over showed cash balance, liquor licenses, proceeds of bonds sold, sinking fund, temporary loans, taxes, water rents, and receipts from other sources for that year only. In the report for 1890 of the wealth, debt, and taxation division will be given in the table of receipts all sources of revenue in cities and large towns of 5,000 population and over for every year since 1880. These will include balance on hand; real, personal, poll or registry, and other taxes; beer, tobacco, trade, professional, and other licenses; railway and other franchises; street, sewer, sidewalk, and other assessments; fines for drunkenness and other

ines, penalties, and forfeitures; rents, net profits of markets, net profits of wharves, profits from water, and other commercial enterprises; income from productive investments; income from public institutions, including jails and prisons; income from the State for schools and other purposes; interest on deposits; other regular sources of income, miscellaneous, and total ordinary receipts. The receipts will also be shown from temporary and bonded loans, sinking fund, special fund, water, other commercial undertakings, markets, and wharves. A sinking-fund statement of receipts will include amount of funds at the beginning of each year since 1880, interest on investments, investments paid off, city treasury, and amount and description of sinking-fund receipts from other sources.

In this schedule of receipts will be included also the available city assets at the end of each year since 1880, embracing cash in treasury, sinking funds, salable land and buildings, taxes and assessments in arrear; other debts due, if regarded as collectible; other available assets, and total. The non-available assets will show water-works, gas-works, school-houses, public buildings, parks, other assets not available, and total.

The schedule of expenditures referred to in a previous paragraph is being similarly arranged, with columns for items of expenditure to correspond with items of receipt, as given above. In the matter of securing full particulars of local government, apart from finance, a comprehensive series of interrogatories is now being completed, which will, it is believed, cover the entire ground.

So far as public indebtedness was concerned the report of the Tenth Census was satisfactory, and the only changes contemplated for the Eleventh Census will be a report of the State, county, and municipal indebtedness of the country for each year of the decade ending in 1890. The history of the national debt and of the several State debts printed in 1880 will stand for all time, and all that will be necessary now is to bring down the facts to 1890. That part of the report relating to local and municipal taxation was imperfect, while the estimates in relation to the true valuation of property, though ahead of anything prior to the Tenth Census, were far from satisfactory. Every effort has been made this year to remedy all the faults and supply the shortcomings of the report of 1880.

The division of wealth, debt, and taxation is now well advanced in its work, and results for the nine years ending in 1889 will be published next summer.

The difficulties to be overcome in this division are general want of classification, lack of clear statements as to sources of receipts and purposes of expenditures, inclusion among ordinary receipts and expenditures of items which do not properly belong thereto, the innumerable errors which arise from the sinking funds, temporary loans, and indeed all the complications and perplexities which come from an attempt to force the accounts of 130,000 debt-creating and taxing minor civil divisions of forty-two sovereign States into one iron-clad mold for the purpose of making a uniform and compact presentation of the entire State and local finance of the nation.

The task of compiling the statistics of national and State finance has been committed to Mr. J. K. Upton, whose many years' experience in the Treasury Department amply qualify him for the work.

RECORDED INDEBTEDNESS.

The clause in the law relating to recorded indebtedness has opened an entirely new field of inquiry and a problem as to methods without precedent in census work.

The manifest and manifold difficulties in arriving at the debt represented by the apparent debt as it appears on the face of the public records of the country are, at first thought, almost insurmountable. Furthermore, the cost of such an investigation, if pursued by the direct method of searching all records and canvassing the parties to whom they relate, would doubtless be greatly in excess of any sum contemplated by Congress in making its appropriations. Indeed, a rough estimate by the Superintendent of Census would indicate that if this method were pursued and the actual recorded indebtedness of private corporations and individuals ascertained it would cost a sum nearly equivalent to the entire amount appropriated for census purposes. Under these circumstances, some preliminary and local inquiries have been instituted in the States of Illinois, Iowa, New York, and Massachusetts, and within a short time the results of this investigation will be given to the public in a census bulletin.

The investigation in the States of Illinois and Iowa has been conducted on parallel lines, and contemplates a study of the actual conditions governing the execution, registry, and discharge of mortgages in those States. A trial transcript has also been made in one county of each State of all mortgages uncanceled of record within a period of twenty years in Illinois and ten years in Iowa for the purpose of arriving, first, at the apparent total debt, and subsequently, by a personal canvass of the parties to those mortgages, at the actual debt; that is, the face of the records less the partial payments made and the payments made in full which do not appear of record. In this connection data have also been obtained from which to make calculations of the average contract time for which mortgages are made and their actual life-time as shown by the history of mortgages canceled, with a view to the development of a possible equation by which to reach trustworthy results by less than the direct method.

In the State of New York Cattaraugus county has been selected as the field of inquiry, and a search of all the records back to 1818 has been effected. A personal inquiry instituted as to the actual debt represented by the total mortgages found uncanceled of record develops the fact that none but recent mortgages are really enforced. In this case the inquiry is also extended to the motive or occasion for contracting the debts recorded, as well as the partial and total payments. This will bring an additional feature of interest under consideration which is doubtless worthy of being pursued in any general investigation, provided it is found feasible.

The special agent who has been engaged in Hampden county, Massachusetts, has pursued a plan that depended very little upon obtaining information outside of the registry of deeds, his object being to develop the method of establishing the total existing real estate mortgage debt at any given date by the discovery and application of the average equated life of mortgages. His only recourse to inquiries addressed to parties to mortgages was to ascertain from savings-banks a percentage of deduction to be made from the established face of the debt for partial payment. Various facts were scheduled in regard to about 22,000 living and dead mortgages, representing loans amounting to \$45,000,000. The aim was to establish the amount of debt with approximate accu-

racy at a minimum expense within a moderate length of time, and to avoid the difficulty of undischarged but fully satisfied mortgages, which had seemed fatal to any sole dependence upon the records.

Incidentally, of course, all these experiences in the field contribute very material information as to the cost of this sort of work and the feasibility of prosecuting it on any large scale.

The special agents assigned to this work are John S. Lord, Frederick W. Kruse, and George K. Holmes, all men of a high grade of intelligence. Mr. Lord, who is the chief of the bureau of labor statistics of Illinois, is probably the best equipped man in this country to conduct an inquiry of this kind, from the fact that he has already made a report showing the recorded indebtedness of the State of Illinois.

THE OWNERSHIP OF FARMS AND HOMES.

In connection with this inquiry, the Superintendent calls attention to the fact that resolutions have been passed in various parts of the country by important labor organizations asking that the forthcoming census show what percentage of the people in this country occupy their own farms and homes and what percentage are tenants; and of those occupying their own farms and homes, what proportion have their property free from debt; and of the farms and homes under mortgage, what percentage of the value is so mortgaged. In the Tenth Census the classification of farms according to tenure was obtained through inquiry on the agricultural schedule, and the results presented in the printed report. (Page 28, volume 3.)

The line of inquiry suggested, relating to the ownership of homes and the mortgage debt upon both homes and farms, is not contemplated by the act under which the Eleventh Census is to be taken, and the inquiry in relation to the recorded indebtedness of individuals and private corporations, if successful, will merely show the aggregate of mortgage indebtedness upon real and personal property. The data contemplated in the resolutions referred to could only be collected by the enumerators on special schedules, such as those relating to the veterans of the war, the special classes, manufactures, farms, etc. This office is willing to undertake the inquiry providing Congress will grant the necessary authorization and provide by additional appropriation the means to pay the enumerators. The importance of statistics which would throw light upon this subject is undoubtedly great, but without special legislation by Congress the Census Office is powerless to act in the matter.

STATISTICS OF AGRICULTURE.

The general statistics of agriculture can best be collected by the enumerators, and therefore it has not been deemed advisable to take up at present the statistics of the special branches of agriculture. Early in the summer the following appeal was made by the Superintendent of Census to the farmers of the country:

It is important to the country that the returns in relation to farm products and live-stock should be full and correct. The enumerator, in the house-to-house visit he will make during the month of June, 1890, is constantly met with the fact that farmers keep no books, and hence returns are not infrequently guess-work. The census year begins June 1, next, and ends May 31, 1890. If farmers throughout the country would note this fact and keep account of the products of their farms during the census year it would be of material aid in securing reliable returns for the Eleventh Census.

The Agricultural Department has kindly offered to co-operate with the Census Office in the preparation of the schedule and in the general endeavor to make the returns of 1890 more satisfactory and complete than ever before, and it is hoped to include some new features in relation to the extent of irrigation, the importance of the dairy and poultry product, the statistics of ranch cattle, and number of animals other than those on farms.

STATISTICS OF MANUFACTURES.

The work of the division of manufactures was initiated April 27, 1889, by the appointment of Mr. F. R. Williams as chief of division, who is to have general supervision of the collection and tabulation of statistics relating to all branches of productive industry for the United States. Mr. Williams was selected for this important duty because of his experience in the Tenth Census in charge of the same branch of work.

The work of the division since its organization has been purely preparatory, embracing the formulation of schedules; the preparation of directory lists, to insure full enumeration of industries; the setting on foot of inquiries to enable the office to properly determine the territory to be covered by its special agents in collecting the general statistics of manufactures, so as to secure the fullest and most valuable returns; the consideration of the claims of various industries to special investigation, and the selection of the more important to be so recognized; and, finally, the conducting of a large correspondence, resulting from the necessity for extensive consultation with manufacturers and representative associations in all branches of productive industry, as well as from the widespread popular interest in the service.

The results thus far obtained are believed to be much in advance of the corresponding period at the Tenth Census, and the increased interest manifested by all classes indicates the procurement for the forthcoming report of the most complete and accurate industrial statistics ever obtained.

Special agents have been appointed to make investigations of the following subjects:

Chemical industry: Henry Bower, of Philadelphia, Pa., and two assistants.

Clay and pottery products: Henry T. Cook, of Trenton, N. J.

Coke and glass: Joseph D. Weeks, of Pittsburgh, Pa.

Cotton goods: Edward Stanwood, of Boston, Mass.

Iron and steel: James M. Swank, of Philadelphia, Pa., and one assistant.

Mixed textiles: Peter T. Wood, of Newark, N. J.

Newspapers and periodical press: S. N. D. North, of Boston, Mass.

Ship-building: Charles E. Taft, of Little Rock, Ark.

Wool and worsted: S. N. D. North, of Boston, Mass.

Silk goods: Byron Rose, of New York City.

Electrical apparatus and supplies: Allen R. Foote, of Cincinnati, Ohio.

Of these appointments it may be said that the inquiries respecting chemicals, coke and glass, iron and steel, mixed textiles, and newspapers and periodicals were at the Tenth Census in the charge, respectively, of those who have been appointed for the same branches for the census of 1890.

In addition to the industries above noted to be specially investigated, the advisability of appointing special agents for electricity, illuminating gas, the leather industry, including boots and shoes, brewing and

distilling, lumbering, the silk industry, and the production of establishments owned, operated, or controlled by railroad companies, is now being considered, and the appointments will probably be made in the near future.

The methods adopted at the Tenth Census will be departed from to the extent of enlarging the territory to be covered by special agents so as to embrace all places of exceptional importance as manufacturing centers, instead of limiting the territory to be covered to cities and towns of 8,000 inhabitants and upwards, as was done in the census of 1880.

The experience of the Tenth Census has also demonstrated the advisability, in fact the necessity, for the collection by the special agents on manufactures and the compilation by this office of the data required for the reports of the expert special agents, instead of a canvass of the entire country by said experts, as was permitted at that census.

As to reports or monographs to be made by special agents for specific subjects and *in extenso*, the reports on chemicals, coke and glass, cotton, iron and steel, mixed textiles, the newspaper press, ship-building, and silk goods, respectively, in the Tenth Census were so fully treated by the then special agents and brought down to date as to dispense with the necessity for a more than incidental reference to the periods antecedent thereto; consequently it is proposed to present in the census of 1890 merely the progress and development of those industries in the decade just closing. The reports, however, which have been or which may be selected to receive at this time their first extended treatment in that respect will be subject to such notice in the way of historical and philosophical research as may be justified by their importance and relation to the industrial progress of the nation, due regard being had to the obtainment of the most practical statistical results, combined with the highest considerations of true economy, both in the collection of the data and their tabulation by this office and their subsequent treatment at the hands of the special agents in their preparation thereof.

The schedules of manufactures used in 1880 will be retained as to their general titles and purposes, and such additional schedules will be formulated as may become necessary by reason of the added special inquiries.

All the schedules have, however, been enlarged, amended, and modified in accordance with the advance of statistical science. In respect to capital invested, and to reconcile to some extent the wide difference between the amount invested in manufactures and the amount shown to have been produced by the employment of such capital, the important and hitherto omitted item of credit capital will be asked for in addition to the real or cash capital. In the matter of labor and wages the schedules will seek to obtain detailed separation between the so-called "productive" and "non-productive" forces, respectively, in order to ascertain the true proportion of labor and wages employed in actual production; and a classified wages table has been added, to show the number of persons employed at the various rates of wages paid. Additional inquiries have been incorporated to show, as nearly as possible, the actual cost of production, and thus to prevent the erroneous deductions and statements which were based on the tables of manufactures in the census of 1880 and those preceding it.

It is greatly to be hoped that manufacturers will realize the necessity of co-operating with this office in filling out these schedules.

In making the changes and additions above noted the necessity for

avoiding radical departures from the lines on which former censuses were conducted has been fully recognized, and the tables of manufactures in the Eleventh Census, though enriched by much and valuable information, will be found consistent and readily to be compared with those of former reports.

MINERAL RESOURCES OF THE NATION.

According to the latest reports of Dr. David T. Day, chief of the division of mining statistics and technology of the United States Geological Survey, the value of our mineral industries has grown during the century from a few million dollars annually to an aggregate of nearly \$600,000,000. This important work has been put in charge of the following well-known experts:

David T. Day, special agent in charge of the division of mines and mining.

William C. Day, special agent in charge of "stone."

John Birkinbine, special agent in charge of "iron ore."

Charles Kirchhoff, jr., special agent in charge of "copper, lead, and zinc."

R. P. Rothwell, special agent in charge of "gold and silver."

Joseph D. Weeks, special agent in charge of "petroleum, coke, natural gas, and glass."

Charles A. Ashburner and John H. Jones, special agents in charge of "coal."

J. B. Randol, special agent in charge of "quicksilver."

A. C. Peale, special agent in charge of "mineral waters."

The general plan adopted in the Tenth Census to secure the statistics of mines and mining throughout the United States seems to have been to treat of the mineral resources of the United States rather than of the mineral products, and to do this in a way which would give as much scientific knowledge regarding the mineral wealth of this country as could be collected. The plan was to include statements regarding the geological connections of our economic minerals as matters of reference for all time for students interested in discovering new deposits or determining the importance of deposits already opened. The chemical characteristics were also to be studied, in order to give data bearing the Government's stamp, on which determinations of relative values of ores could be made. The prospector was further to be aided in his search by a statement of the topographic relations of our mineral deposits. The usual statistical features in regard to amount of product, its value, the cost of materials, etc., were also to be considered.

The proposal of this plan and its execution were primarily given by the Superintendent to Hon. Clarence King, then director of the United States Geological Survey. His first act in the execution of the plan was the primary subdivision of the work. He divided the subject of mines and mining geographically, assigning to Prof. Raphael Pumpelly the minerals east of the one hundredth meridian, to Mr. S. F. Emmons the Rocky Mountain region, and to Mr. G. F. Becker the Pacific coast region. The work thus divided proceeded according to the views of three more or less independent officers, and naturally some inconsistencies in methods of treatment came in at this early stage. These inconsistencies increased, until the most vital criticism of the entire result is that there was no correlation of the various reports. Each subject was a law to itself. There was no general eye seeing that the information concerning all the different minerals could be added to-

gether. The plan seemed to be to collect as much information in regard to each subject as was possible without much attempt to combine results in one systematic treatment. Hence we find building stone in one volume, precious metals in another, salt in another, and still another called "Mining Industries" (excluding precious metals). In spite of this defect of arrangement, a decided step in advance was made in this line of inquiry.

In the Eleventh Census the subject of mines and mining, as will be seen from the above, has been divided by minerals, and not by geographical distribution. Moreover, all the work will be supervised by one expert, and he will be held responsible by this office for uniformity of presentation. The utility of this is evident at once from the simple fact that the finished report will not treat of separate sections of the United States, but of the condition of the entire country with reference to each material element of its mineral wealth, and the plan for conducting the work itself must be similarly arranged. The most important feature is that which has been adopted, of giving the charge of each mineral to the person best drilled in collecting its statistics and to hold him responsible for the prosecution of the inquiry until the volume is printed, at the same time having the plan for each mineral supervised by one central head, who will see that they are all conducted in harmony, and who will be so intimately associated with the work as to be able to take it up and finish it on the original plan if any interruption comes to the work of the agent in charge of that particular branch.

There are no topics to be treated in the Eleventh Census which did not appear in connection with some mineral in the Tenth Census, except, perhaps, that the great importance of our fuels deserves a consideration of the distribution of the product as the basis of all our industries.

STATISTICS OF COAL PRODUCTION.

This brings us to the subject of coal. The statistics of coal which it is planned shall be collected by the Eleventh Census may be embraced under two general heads:

(1) The production of the individual coal mines of the United States, with such correlative facts connected with the ways and means of producing the coal as shall give an intelligent idea as to the forces which have been employed at each mine in its production. This information might be classed under the general head of colliery statistics.

(2) The shipment of coal from the mines in the United States and its distribution to the prominent geographical boundaries limiting States and manufacturing centers. The importance of this latter feature of the work can not be overestimated, since the public at large can only obtain intelligent information as to the coal-mining industry of the United States through a conception of the relation of the coal production to the consumer.

Professor Pumpelly's plan was far in advance of every other plan which had been designed for carrying on previous investigations of this character, and if it had been fully carried out by capable and efficient assistants under the constant direction of Professor Pumpelly the results accomplished would have been superior in every respect to anything that had ever been attained in Great Britain and the European countries. They were, however, the best which had ever been published for the United States coal-mining industry.

As regards the forces which are available for collecting the mineral statistics of the Eleventh Census, no such charitable reservation in

criticising its work can be allowed, since the Eleventh Census has at its command a force of statisticians fully qualified and experienced to carry on the work as planned.

GOLD AND SILVER.

Concerning the scope of the inquiry relating to questions on the schedules, etc., there is little occasion for remark beyond the statements already given; but the necessity for extreme accuracy in results is evident, not only from the relatively high value of these metals and the significant total, but on account of their relations to our coinage. No exception could be taken to the plan adopted for the last census, provided it could have been carried out thoroughly in a short time. This was not possible, however, because a very extended schedule was placed in the hands of special agents, who began with the mines and worked toward the finished product. It soon became evident that within reasonable time limits, and even with a large expenditure of money, this cumbersome schedule could not be filled out for all the mines, and indeed returns were not received from all the large mines. A change of plan became necessary, and the opposite course was pursued of getting returns of refined gold and silver from the smelters.

The weak points of the investigation were an extraordinarily long schedule and the attempt to fill it out by visits of special agents to all the mines. For the Eleventh Census the plan will be to determine, by means of the smelters, refineries, and assay offices of the mints, the total quantity of gold and silver produced as it first appears in the refined form on the market, and to trace this back from the refining works to the producers of base bullion, then to the sampling works (where the ores from different sections are mixed), and from these to the principal mines, so as to show the States, and the principal districts of each State, from which gold and silver came. So much for the product. The inquiry will also show the usual questions in regard to capital, labor, and materials employed in the various steps to the finished product; and the special agent will also obtain these statistics for the principal mines. For the small mines, the statistics concerning the number of men employed will be referred to the enumerators, with such checks by the special agent as his own investigation will necessarily give him.

COPPER, LEAD, AND ZINC.

The treatment of copper, lead, and zinc will be similar to that of gold and silver. The starting point in the investigation will be the metals themselves, and they will be traced back in a similar way to the producing centers. The difficulties in this investigation are much smaller, particularly as the conduct of this work will be only in extension of that already accomplished by the same agent for the report on "Mineral Resources of the United States." A considerable amount of joint work with the agent in charge of gold and silver will be necessary in collecting the statistics of lead, and this is now being carefully arranged. In connection with the report on lead in the Tenth Census the geographical division, giving the collection of the statistics for the region east of the Missouri River to one agent and the statistics west of that region to another, proved particularly unfortunate.

IRON ORES.

The present investigation in relation to iron ores will be different from the last, principally in the direction of a limited schedule, which it is hoped will be published with unusual promptness. Care will be taken to make more extended use of blast-furnaces in determining the amount of ore received from small mines, for it should be noticed that in many cases iron ore is produced without any definite mining operation at all. For example, in Maryland more than fifty names could be cited of persons put down in the directory of mines of the Tenth Census who gathered from 1 to 5 tons each in ordinary plowing.

STATISTICS OF BUILDING STONE.

In the proposed inquiry relating to building stone it is suggested to divide the stone quarried in the United States into the following classes: Granite and allied rock, sandstone, common limestone, marble, and slate. This division is based upon both scientific and economic principles, and is sufficiently broad to cover all kinds of stone quarried. The effort will be made to arrive at a knowledge of all the stone quarried and sold, without restricting statistical inquiries to any limit determined by the money value of the output during the calendar year. The all-important features will be statistics. Inquiries of a scientific nature will be restricted to economic necessities. This statement will be found to need the following explanation: There is among producers an unfortunate looseness in nomenclature, so that it is not always possible to tell from a producer's report what kind of stone he quarries. In such cases care will have to be observed to avoid classifying the products erroneously. This danger will be avoided by recourse to the scientific opinions and judgments of men qualified by general and local knowledge to settle all questions in regard to the nature of the stone quarried in a given locality. These opinions can frequently be obtained by reference to such State or other surveys as have been made, or by correspondence or interview with the proper scientific men residing in or near the localities in question. It is proposed, in this connection, to compile and have in hand a directory of such men in the United States. It is further believed that interest in the success of the census report and the interest which they naturally feel in their own State or sections of the country will be sufficient inducement to secure their hearty co-operation.

Statistics will be obtained by mailing schedules to producers, a directory of whom is now being compiled.

The statistics should include the following items: Number of quarries, capital invested, product of calendar year 1889, value of product, number of machines employed, number of months in operation during the above year, number of laborers employed, number of animals employed, means of transportation, and average day's wages.

All information will be classified and arranged with due regard to accessibility and ease of reference, care being taken to avoid padded reports, containing badly-arranged and disjointed items of information strung along through interminable paragraphs and pages.

The work of this important division of the Census Office is thoroughly in hand, and it is confidently expected that most of the reports will be completed and ready for the printer before the close of 1890.

FISH AND FISHERIES.

In referring to the statistics of fish and fisheries in the report of 1879 the Superintendent of the Tenth Census said: "The statistics of fisheries have been a blank, or it would be more proper to say a blotted page of the census reports ever since these statistics were first sought to be obtained."

The first fishery census attempted by the United States Government was that of 1860. The report covered twenty-five pages, but was of a very general character. No statistics were given for separate fisheries except for the whale fishery. In the census of 1870 the statistics of the fisheries were still more meager and nearly valueless, probably not reaching 20 per cent. of their actual extent.

The fishery census of 1880 was, therefore, the first attempt at an elaborate presentation. There were published from the material gathered in a large measure by the agents of that census five quarto volumes of text and two volumes of illustrations. So far as this office can judge, these reports have been of a highly satisfactory character to the general public. Those who were engaged in that undertaking have naturally felt that in many respects their work was incomplete, and that perhaps too much was undertaken. It was intended to cover the widest range of topics relating to the fisheries, both past and present. As the Fish Commission participated in the inquiry, its scope was much broader than would be proper for the census of 1890. For instance, the following topics will not be repeated: The natural history of all useful aquatic animals; a description of the fishing grounds of North America; statistics of ocean temperatures; the history and methods of the fisheries; the modes of preparation of fishing products; fish culture; and a bibliography of the literature.

It is proposed in the present census to obtain not only the class of statistics that were included in the censuses of 1860 and 1870, but also the most important statistics of the industry that were comprised in the census of 1880. This includes the following:

First. Persons employed and capital invested in the various branches of the industry.

Second. A descriptive list of fishing vessels.

Third. A list of the productive fishing grounds.

Fourth. The number and value of the different kinds of apparatus used in the fisheries.

Fifth. Statistics of wages, rent, taxes, insurance, commissions, interest, freight, and transportation.

Sixth. The amount and value of products of each important fishery.

The number of these fisheries will be more than thirty.

Since the last census a new branch of fishing industry has sprung up, due to the importation about twelve years ago of German carp, which have been placed in ponds in nearly every county in the United States, and it is expected that the statistics in relation to this addition to our food resources will furnish very interesting results.

All these statistics will be presented by State summaries, and, if practicable, by counties. Under the general term "fisheries" is comprehended all useful products of the sea, such as fish, oysters, lobsters, clams, whales, seals, squid, abalone, mussel, scallop, etc. So far as any of these are of commercial importance they will be included in the inquiry, those of the most importance receiving the largest attention.

This work is under the direction of Capt. J. W. Collins and Charles

W. Smiley, both well-known experts in fish statistics, who are thoroughly equipped by training and experience for the difficult task they have undertaken.

TRANSPORTATION.

Under this title, in Volume IV, the Tenth Census made a tremendous stride in the statistics of railroads and water-ways. Railroad experts to-day admit that in many respects the work was well performed, and the Eleventh Census returns will conform as nearly as possible to the model set by those of the census of 1880. Prof. Henry C. Adams, statistician of the Interstate Commerce Commission, assisted by Armin E. Shuman, the expert who compiled the statistics of transportation for the Tenth Census, will have charge of this division of the work. The volume will be divided into two parts, and will include returns upon the following subjects:

Railways; shipping, exclusive of fishing-boats and foreign shipping; telegraph companies; telephone companies; express companies; street railways.

In every case an attempt will be made to give—

(1) The corporate history and corporate organization of the business concerned.

(2) A description of the property operated.

(3) To discover as nearly as possible the value and cost of the property described, and also the amount of stock and bonds which have been issued against the property.

(4) A concise statement of the receipts and expenditures incident upon the operation of the several kinds of property described.

(5) To further discover and state the amount of service rendered to the public by the various businesses under consideration.

In part 2 will be presented such facts as will throw light upon the development of the transportation industry and the development of the country at large. In addition to the statistics for the year ending June 30, 1890, it is intended to collate certain leading facts for that decade. Schedules for this purpose are already in the hands of the printer, and most of the information will be gathered before the enumeration in June, 1890.

I. It is desired to know the mileage of 1880, and the extent and local tion of new mileage for each succeeding year to and including 1890. These facts will not be given merely in tabular form, but it is intended to draw a map of the United States, upon which shall be plotted for each year the railroad mileage, that of each year being designated by certain colors.

II. It is the intention of the office to collate for each of the ten years of the decade the number of tons and the number of passengers carried; also the equipment for each year with which this business was done.

III. Corresponding facts must be discovered for operating expenses.

IV. Corresponding figures are presented for income.

V: Similar corresponding facts for all employés, exclusive of those employed in the construction of new lines.

In brief, the Census Office not being restricted by any technical consideration, nor bound down to any immediate interest, will set before itself the broad purpose of making an exhibit of the mechanism of transportation as it exists in 1890; of stating in tabular or graphic form the work which this machinery performs in modern society, and of portraying the relation its development bears to the development of society as a whole.

The same data will be obtained in relation to the water-ways, telegraph, telephone, and express companies of the country. In the case of the three latter classes of corporations, it may be necessary to ask for additional legislation, in order that this office may be empowered to secure the information required. Touching these corporations the Census Office is coming squarely up to the question of the right of the Government to certain classes of facts. In the opinion of the Superintendent the public has a right to these facts, and the Census Office should be armed, as it is in case of railroads, with the necessary powers to insist upon full and accurate returns. Otherwise the statistics of telegraph, telephone, and express companies will be worse than a farce.

INSURANCE.

The special inquiry in relation to the insurance business of the country for the Tenth Census yielded some splendid results, but through lack of funds and delays it was never published. Had it been printed it would have been satisfactory. The Superintendent has therefore committed this work to Mr. Charles A. Jenney, the expert who had charge of it in 1880, but in doing so has made certain restrictions in relation to time of publication and data that will insure a strict compliance with the law and at the same time prompt publication.

There was much unnecessary detail required in the report of 1880. The report of the Eleventh Census will show only such detail of the companies' business as is necessary to make a proper and intelligent statement of the insurance business of the country, and enable the report to be more comprehensive and at the same time more compact. The following is the general scope of the facts that will be included in the investigation :

Table I. Record of companies, showing name, location, organization, kind of business, kind of property insured, and capital.

- II. Assets of companies, class 1, 2, 3.
- III. Liabilities of companies, class 1, 2, 3.
- IV. Assets and liabilities of companies, class 4. (Tables II and III condensed.)
- V. Recapitulation, by States, of Tables II, III, and IV.
- VI. Income and receipts of companies, class 1, 2, 3.
- VII. Expenditures of companies, class 1, 2, 3.
- VIII. Income and expenditures (Tables VI, VII, condensed), class 4.
- IX. Recapitulation, by States, of Tables VI, VII, VIII.
- X. Gross assets, liabilities, income, and expenditures, with percentages, class 1, 2, 3, 4.
- XI. Recapitulation, by States, of Table X.
- XII. Risks written by companies, class 1, 2, 3.
- XIII. Risks in force by companies, class 1, 2, 3.
- XIV. Risks written and risks in force (Tables XII, XIII, condensed), class 4.
- XV. Recapitulation, by States, of Tables XII, XIII, XIV.
- XVI. Condensed statement of assets and liabilities January 1, 1880, and December 31, 1889, and the income and expenditure during the ten years 1880 to 1889, both inclusive.
- XVII. Statement of fire, marine, inland, and tornado business done in each State and Territory during the ten years 1880 to 1889, both inclusive.

The foregoing table refers particularly to the fire, inland, and marine business. The tables for the life insurance and miscellaneous insurance companies will follow closely the same general facts as those for the fire insurance companies.

The work of the division is already well advanced, and valuable results will be ready for publication in the summer of 1890.

ALASKA.

By reference to the proposed list of supervisors' districts (Census Bulletin No. 1) it will be seen that the territory of Alaska has been made a supervisor's district. The enumeration of the citizens of that territory, together with its agriculture, mining, manufactures, and fisheries, so far as they can be reached by the ordinary machinery, should be obtained by the enumerators. The Indian population of the territory, however, can not be counted by the enumerators, nor does this office believe that it is practicable to obtain anything better than an estimate of their numbers, scattered, as they are, over a territory of half a million square miles. The basis of this estimate should be obtained by the same machinery which will make the enumeration of Indians in other parts of the country.

A sketch of the resources of the territory in lumber, furs, fish, etc., was made in the form of a report to the last census by Mr. Ivan Petroff after many months spent in traveling over the territory. It does not appear that anything fuller, more comprehensive, or more reliable than Mr. Petroff's work can be done without a thorough exploration at great expense. That expense this office is not prepared to bear, nor does it appear to be a duty naturally devolving upon the Census Office, but rather upon the Geological Survey, the Fish Commission, and other bureaus of the Government having those matters more immediately in charge.

INDIANS.

The consideration of the Indian census naturally divides itself into two parts: First, that relating to the large and rapidly increasing body of Indians who have abandoned tribal relations and are not living upon reservations. These should be, for census purposes, regarded as citizens, and counted by the ordinary machinery of the enumeration. To this class must be added all Indians living in settled habitations within the area obtained from Mexico at the close of the Mexican war, including the Pueblos, the Moquis, and possibly the Indians living upon the Lower Gila, namely, the Pimas and the Maracopas. The second group comprises all Indians living upon reservations or maintaining their tribal relations, with the exception of those noted above. No full or accurate census of these Indians has ever been made.

The Indian Office has prepared for its use, and has presented in its annual reports, counts of their numbers, which, although confessedly imperfect, answer the purpose of that office. An attempt was made by the last census to enumerate them upon a very elaborate plan, and of many of the tribes, particularly those on the west coast, a full enumeration was obtained; but the investigation was stopped by the failure of the appropriation, and was not resumed. An enumeration of these Indians may be made on a plan conforming, as nearly as the peculiar circumstances of the case will admit, to that pursued for the regular enumeration of the inhabitants, and it is proposed, with your approval, to undertake this work, having been assured of the full sympathy and co-operation of the Indian Office. It would be impossible to enumerate these Indians by the ordinary machinery of the census or at the time when the count of the inhabitants is made. Most of them should be enumerated in the winter, when the greater part of them will be gathered at the agencies, as in the summer they will be widely scattered over their reservations.

In completing the organization of the bureau, Mr. Albert F. Childs has been appointed chief clerk. Mr. Childs was a clerk in the office of Public Printer A. M. Clapp for five years, and was chief clerk of the Government Printing Office during the five years that the late John D. Defrees was Public Printer. He is therefore, by experience and ability, thoroughly qualified for the important administrative duties which will devolve upon him.

From the above it will be seen that every provision possible has been made for a successful enumeration of the population, wealth, and industry of the United States next June, and that every special inquiry demanded by the act of March 1, 1889, has been started. Many of the important divisions of the census are now well advanced with their work. If satisfactory arrangements can only be made for the prompt publication of the results, the Superintendent is confident that the Eleventh Census will not only be accurate and cover all the statistical investigations required by law, but will be out on time.

I have the honor to be, sir, very respectfully,

ROBERT P. PORTER,
Superintendent of Census.

The SECRETARY OF THE INTERIOR.

REPORT
OF THE
BOARD OF VISITORS OF THE GOVERNMENT HOSPITAL
FOR THE INSANE.

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M. J. STACK, M. D., *Second Assistant Physician, in charge of Male Department.*
A. C. PATTERSON, M. D., *Third Assistant Physician and Chief Clerk.*
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REPORT

OF

THE BOARD OF VISITORS.

GOVERNMENT HOSPITAL FOR THE INSANE,
Washington, D. C., August 16, 1889.

SIR: The Board of Visitors have the honor to submit this, their thirty-fourth annual report, that for 1889.

The following tables give a condensed statement of the movements of population and the results of a year of hospital work:

SUMMARY.

	Males.	Females.	Total.
Remaining June 30, 1888.....	1,029	332	1,361
Admitted during the year ending June 30, 1889	213	67	280
Whole number under treatment.....	1,242	399	1,641
DISCHARGED.			
Recovered	50	20	70
Improved	27	27	54
Unimproved	4	2	6
Died	86	28	114
Total discharged and died.....	167	77	244
Remaining June 30, 1889.....	1,075	322	1,397

Admissions and discharges.

		Males.		Females.		Totals.
REMAINING JUNE 30, 1888.						
Army.....	{ White ...	623	634	3	3	637
	{ Colored..	11		.....		
Navy	{ White ...	56	58			58
	{ Colored..	2				
Marine Hospital Service.....	{ White ...	14	16			16
	{ Colored..	2				
Civil life	{ White ...	233	321	238	329	650
	{ Colored..	88		91		
			1,029		332	1,361

Admissions and discharges—Continued.

		Males.		Females.		Total.	
ADMITTED DURING THE YEAR 1888-'89.							
Army	{ White ... Colored..	108 3	111			111	
Navy	{ White ... Colored..	13 1	14			14	
Marine Hospital Service	{ White ... Colored..	7	7			7	
Civil life	{ White ... Colored..	57 24	81	43 24	67	148	280
			213		67		
UNDER TREATMENT DURING THE YEAR.							
Army	{ White ... Colored..	731 14	745	3	3	748	
Navy	{ White ... Colored..	69 3	72			72	
Marine Hospital Service	{ White ... Colored..	21 2	23			23	
Civil life	{ White ... Colored..	290 112	402	281 115	396	798	1,641
			1,242		399		
DISCHARGED DURING THE YEAR—RECOVERED.							
Army	{ White ... Colored..	17 4	21			21	
Navy	{ White ... Colored..	7 1	8			8	
Marine Hospital Service	{ White ... Colored..	5	5			5	
Civil life	{ White ... Colored..	14 2	16	15 5	20	36	70
			50		20		
DISCHARGED DURING THE YEAR—IMPROVED.							
Army	{ White ... Colored..	16	16			16	
Navy	{ White ... Colored..						
Marine Hospital Service	{ White ... Colored..						
Civil life	{ White ... Colored..	11	11	18 9	27	38	54
			27		27		
DISCHARGED DURING THE YEAR—UNIMPROVED.							
Army	{ White ... Colored..	2	2			2	
Navy	{ White ... Colored..						
Marine Hospital Service	{ White ... Colored..						
Civil life	{ White ... Colored..	2	2	2	2	4	6
			4		2		

Admissions and discharges—Continued.

		Males.		Females.		Total.	
DECEASED DURING THE YEAR.							
Army.....	{ White ... Colored ..	58 ----- 2	58				58
Navy	{ White ... Colored ..	----- ----- 2	2				2
Marine Hospital Service.....	{ White ... Colored ..	2 ----- -----	2				2
Civil life.....	{ White ... Colored ..	14 10 ----- -----	24	19 9 -----	28		52
			86		28	28	114
REMAINING JUNE 30, 1889.							
Army.....	{ White ... Colored ..	638 10 -----	648	3 -----	3		651
Navy	{ White ... Colored ..	60 2 -----	62				62
Marine Hospital Service.....	{ White ... Colored ..	14 2 -----	16				16
Civil life.....	{ White ... Colored ..	249 100 -----	349	227 92 -----	319		668
			1, 075		322		1, 397

The patients from civil life remaining June 30, 1889, are classified as follows :

	Male.	Female.	Total.
District of Columbia—transient.....	43	20	63
District of Columbia—resident indigent.....	257	291	548
United States convicts and criminals.....	45	5	50
Private patients	4	3	7
Total.....	349	319	668

Monthly changes of population.

Date.	Admitted.			Discharged.						
	Males.	Females.	Total.	Males.	Females.	Total.	Died.			Total discharges, including deaths.
							Males.	Females.	Total.	
July, 1888.....	16	15	31	8	15	23	5	4	9	32
August, 1888.....	16	10	26	7	7	14	10	1	11	25
September, 1888.....	29	3	32		3	3	7	2	9	12
October, 1888.....	31	4	35	6	4	10	3	3	6	16
November, 1888.....	6	8	14	14	1	15	14	1	15	30
December, 1888.....	15	5	20	15	6	21	5	1	6	27
January, 1889.....	12	4	16	2	3	5	9	2	11	16
February, 1889.....	8	6	14	4	1	5	8	2	10	15
March, 1889.....	39	2	41	4	4	8	5	3	8	16
April, 1889.....	18	4	22	4	3	7	4	5	9	16
May, 1889.....	14	6	20	9		9	9	2	11	20
June, 1889.....	9		9	8	2	10	7	2	9	19
Total.....	213	67	280	81	49	130	86	28	114	244

Cause of death.

Apoplexy.....	1	General paralysis, with gastritis	1
Apoplexy, hemorrhagic	5	Gangrene, pulmonary	1
Apoplexy, with organic disease of brain	3	Gangrene, senile	2
Bright's disease, chronic	2	Maniacal exhaustion	1
Bronchitis	1	Organic disease of brain	6
Bronchitis, chronic, with cardiac atrophy	1	Organic disease of brain, with pneumonia.....	1
Bronchitis, chronic, with diarrhœa..	1	Organic disease of brain, with bulbar paralysis	3
Carcinoma	6	Paralysis, bulbar	1
Cardiac valvular disease.....	5	Peritonitis	3
Dysentery, with abscess of liver.....	1	Phthisis.....	23
Epileptic convulsions.....	3	Pneumonia.....	2
Epileptiform convulsions	3	Pulmonary congestion.....	3
Exhaustion and inanition.....	5	Peri-nephritic abscess with pyæmia..	1
Empyema	1	Senectus	4
Fever, pernicious remittent.....	1	Senectus with diarrhœa	2
Fever, typho-malarial	1	Senectus with organic disease of brain	5
General paralysis.....	2	Suicide (drowning).....	1
General paralysis with bulbar paralysis	2	Ulceration of gall-bladder with acute peri-hepatitis.....	1
General paralysis with diarrhœa	1		
General paralysis with epileptiform convulsions	5	Total	114
General paralysis with exhaustion ..	3		

Duration of the mental disease on admission of those who recovered.

Under 10 days	10	Between 8 and 10 months	1
Between 10 and 20 days.....	8	Between 1 and 2 years	2
Between 20 and 30 days.....	2	Between 3 and 4 years	2
Between 1 and 2 months	22	Between 4 and 5 years	1
Between 2 and 3 months	5	Between 9 and 10 years	1
Between 3 and 4 months.....	10		
Between 4 and 5 months	2	Total	70
Between 6 and 8 months	4		

Duration of mental disease of those who died.

One month	1	Twelve years.....	5
Three months	1	Thirteen years	5
Four months	1	Fifteen years.....	1
Six months.....	5	Sixteen years.....	2
Nine months	3	Seventeen years	3
Ten months	1	Eighteen years	1
One year.....	16	Twenty years.....	3
Two years.....	23	Twenty-one years	1
Three years	10	Twenty-two years	2
Four years	4	Twenty-three years.....	2
Five years.....	4	Twenty-six years.....	2
Six years.....	3	Twenty-seven years	1
Seven years	3	Thirty years	1
Eight years	2	Unknown	1
Nine years	3		
Ten years	1	Total	114
Eleven years	3		

Duration of disease on admission.

		Males.		Females.		Totals.	
LESS THAN SIX MONTHS.							
Army	{ White... Colored..	23 1	24			24	
Navy	{ White... Colored..	5 1					
Marine Hospital Service.....	{ White... Colored..	6	6			6	
Civil life	{ White... Colored..	27 11	6	18 11	29	6	103
			38			29		67
LESS THAN ONE YEAR.							
Army	{ White... Colored..	6	6			6	
Navy	{ White... Colored..	..... .....					
Marine Hospital Service.....	{ White... Colored..	..... .....					
Civil life	{ White... Colored..	4 2	6	6 1	7	13	19
ONE TO TWO YEARS.							
Army	{ White... Colored..	34 1	35			35	
Navy	{ White... Colored..	5	5				
Marine Hospital Service	{ White... Colored..	1	1			1	
Civil life	{ White... Colored..	12 4	16	7 4	11	27	68
OVER TWO YEARS.							
Army	{ White... Colored..	18	18			18	
Navy	{ White... Colored..	..... .....					
Marine Hospital Service.....	{ White... Colored..	4	4			4	
Civil life	{ White... Colored..	..... .....		22			22
OVER THREE YEARS.							
Army	{ White... Colored..	5 1	6			6	
Navy	{ White... Colored..	2	2				
Marine Hospital Service.....	{ White... Colored..	..... .....					
Civil life.....	{ White... Colored..	3	3	2 1	3	6	14

Duration of disease on admission—Continued.

		Males.			Females.			Total.	
OVER FOUR YEARS.									
Army	{ White... Colored...	6	6	7				6	7
Navy	{ White... Colored...								
Marine Hospital Service	{ White... Colored...								
Civil life.....	{ White... Colored...	1	1				1		
FIVE TO TEN YEARS.									
Army.....	{ White... Colored...	7	7	12				7	15
Navy	{ White... Colored...								
Marine Hospital Service.....	{ White... Colored...								
Civil life.....	{ White... Colored...	1 4	5		3 3	3	8		
TEN TO TWENTY YEARS.									
Army.....	{ White... Colored...	2	2	11				2	19
Navy	{ White... Colored...	1			1			1	
Marine Hospital Service.....	{ White... Colored...								
Civil life.....	{ White... Colored...	5 3	8		5 3	8	16		
OVER TWENTY YEARS.									
Army.....	{ White... Colored...	7	7	7				7	11
Navy	{ White... Colored...								
Marine Hospital Service.....	{ White... Colored...								
Civil life.....	{ White... Colored...				2 2	4	4		
UNKNOWN.									
Army.....	{ White... Colored...			7					2
Navy	{ White... Colored...								
Marine Hospital Service.....	{ White... Colored...								
Civil life.....	{ White... Colored...				2 2	2	2		

Table showing the nativity as far as could be ascertained of the 7,511 cases treated.

Native born.	Number.	Foreign born.	Number.
District of Columbia.....	900	Ireland.....	1,416
New York.....	527	Germany.....	953
Maryland.....	565	England.....	168
Virginia.....	637	France.....	65
Pennsylvania.....	404	Canada.....	59
Ohio.....	228	Scotland.....	62
Massachusetts.....	168	Switzerland.....	29
Maine.....	82	Italy.....	29
Illinois.....	73	Denmark.....	21
Connecticut.....	58	Norway.....	14
New Hampshire.....	59	Sweden.....	27
Indiana.....	65	Poland.....	14
Kentucky.....	55	Prussia.....	2
Michigan.....	42	Panama.....	1
New Jersey.....	66	Russia.....	13
Tennessee.....	33	Austria.....	15
Wisconsin.....	28	Nova Scotia.....	9
Vermont.....	35	Spain.....	4
Missouri.....	39	Holland.....	10
Rhode Island.....	24	Wales.....	6
Delaware.....	16	Portugal.....	4
North Carolina.....	28	Hungary.....	4
Alabama.....	13	Mexico.....	5
South Carolina.....	16	Saxony.....	6
Iowa.....	7	Malta.....	3
Georgia.....	18	Belgium.....	4
Mississippi.....	19	Buenos Ayres.....	1
Louisiana.....	10	Costa Rica.....	1
West Virginia.....	15	Bavaria.....	4
Kansas.....	3	Sicily.....	1
Florida.....	3	British Columbia.....	1
Texas.....	10	British Possessions.....	1
California.....	6	East Indies (British).....	5
Indian Territory.....	5	West Indies (British).....	6
Colorado.....	1	New Brunswick.....	2
Arkansas.....	3	Cuba.....	2
Montana.....	1	China.....	1
Oregon.....	1	Sandwich Islands.....	1
Minnesota.....	1	Coast of Africa.....	1
Total.....	4,264	Cyprus.....	1
		Turkey.....	1
		Greece.....	1
		New Granada.....	1
		West Indies (Hayti).....	1
		Total.....	2,975

Native born.....	4,264
Foreign born.....	2,975
Unknown.....	272
Total.....	7,511

Form of disease in those admitted.

Disease.	Total last year.	Admitted during year.	Total.	Disease.	Total last year.	Admitted during year.	Total.
Mania, acute.....	2,299	57	2,356	Dipsomania.....	435	1	436
Mania, chronic.....	1,239	37	1,276	Kleptomania.....	4		4
Melancholia.....	1,048	97	1,145	Nymphomania.....	4		4
Dementia.....	1,740	44	1,784	Imbecility.....	90	5	95
Dementia, senile.....	162	24	186	Opium-eaters.....	19		19
Paresis.....	176	15	191	Idiocy.....	1		1
Typhomania (Bell's disease).....	2		2	Not insane.....	11		11
Diffuse suppurative meningitis.....	1		1	Total.....	7,231	280	7,511

Tabular statement of the time of life at which the 7,511 cases treated since the opening of the institution became insane.

Age.	1888.	1889.	Total.
Under 10 years.....	155	11	166
Between 10 and 15 years.....	75	4	79
Between 15 and 20 years.....	408	8	416
Between 20 and 25 years.....	1,164	25	1,199
Between 25 and 30 years.....	1,314	36	1,350
Between 30 and 35 years.....	1,138	22	1,160
Between 35 and 40 years.....	842	23	865
Between 40 and 45 years.....	616	21	637
Between 45 and 50 years.....	447	40	487
Between 50 and 60 years.....	499	37	536
Between 60 and 70 years.....	277	32	309
Between 70 and 80 years.....	106	8	114
Between 80 and 90 years.....	14	1	15
Over 90 years.....	2	.....	2
Unknown.....	163	2	165
Not insane.....	11	.....	11
Total.....	7,231	280	7,511

Private patients.

	Male.	Female.	Total.
There were at the beginning of the year.....	5	4	9
Admitted during the year.....	.....	1	1
Whole number under treatment.....	5	5	10
Discharged during the year.....	1	2	3
Remaining at end of year.....	4	3	7

Table showing the history of the annual admissions since the opening of the hospital, with the discharges and deaths, and the number for each year remaining June 30, 1889.

Years.	Admitted.			Of each year's discharged and died in 1889.												Total discharged and died of each year's admissions.												Remaining of each year's admissions June 30, 1889.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	New cases.		Total.	Recovered.			Improved.			Unimproved.			Died.			Recovered.			Improved.			Unimproved.			Died.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	Male.	Female.		Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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Table showing admissions, discharges, and deaths, with the mean annual mortality and proportion of recoveries, per cent. of the discharges, including deaths, for each year since the opening of the hospital.

Years.	Admitted.			Discharged.						Remaining June 30 in each year.			Daily average.			Percentage of recoveries on discharges.			Percentage of deaths on average numbers.			Percentage of deaths on total numbers under treatment.		
				Recovered.			Improved.			Unimproved.			Died.											
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
1885	26	37	63	3	3	6	1	1	2	1	1	2	5	3	8	19	20	39	40	59	100	12	6	18
1886	36	11	47	2	2	4	3	1	4	7	3	10	8	8	16	41	37	78	79	78	33	10	6	16
1887	25	27	52	18	4	22	1	1	2	2	3	5	54	50	104	54	50	104	97	104	25	14	39	43
1888	29	14	43	5	5	10	1	1	2	2	3	5	57	52	109	57	52	109	108	109	41	11	52	52
1889	47	18	65	21	5	26	1	1	2	5	3	8	72	64	136	72	64	136	129	136	25	11	36	36
1890	68	24	92	33	7	40	4	3	7	3	2	5	100	88	188	100	88	188	159	188	31	11	42	42
1891	64	31	95	53	2	55	5	2	7	2	2	4	109	72	181	109	72	181	174	181	41	11	52	52
1892	174	12	186	104	1	105	14	1	15	3	3	6	168	65	233	168	65	233	189	233	42	11	53	53
1893	330	25	355	203	6	209	17	1	18	5	5	10	213	76	289	213	76	289	240	289	42	11	53	53
1894	484	25	509	288	6	294	69	1	70	5	5	10	295	86	381	295	86	381	283	381	40	11	53	53
1895	478	36	514	324	9	333	110	12	122	11	11	22	167	93	260	167	93	260	283	260	31	11	42	42
1896	194	28	222	109	5	114	20	7	121	10	10	20	190	96	286	190	96	286	279	286	20	11	31	31
1897	88	21	109	52	7	59	45	11	64	5	5	10	189	92	281	189	92	281	279	281	20	11	31	31
1898	120	33	153	64	15	79	49	6	84	8	8	16	221	102	323	221	102	323	317	323	65	11	26	26
1899	133	35	168	70	11	81	59	9	90	8	8	16	244	109	353	244	109	353	352	353	65	11	26	26
1900	146	36	182	82	8	90	32	8	100	11	3	14	294	123	417	294	123	417	402	417	65	11	26	26
1901	161	34	195	62	12	74	50	16	90	4	3	7	354	124	478	354	124	478	476	478	65	11	26	26
1902	142	44	186	51	8	59	43	21	74	8	1	9	407	139	546	407	139	546	538	546	65	11	26	26
1903	153	51	204	64	15	79	49	23	92	3	5	8	431	152	583	431	152	583	575	583	65	11	26	26
1904	192	38	230	79	12	91	67	22	111	6	3	9	492	156	648	492	156	648	643	648	65	11	26	26
1905	179	51	230	75	9	84	66	28	94	8	3	11	536	166	702	536	166	702	700	702	65	11	26	26
1906	166	47	213	84	17	101	67	22	89	1	1	2	564	168	732	564	168	732	730	732	65	11	26	26
1907	147	51	198	83	17	100	66	26	92	3	1	4	587	182	769	587	182	769	763	769	65	11	26	26
1908	138	41	179	60	11	71	66	27	87	3	4	7	596	193	789	596	193	789	781	789	65	11	26	26
1909	169	53	222	92	24	116	68	30	98	3	3	6	619	202	821	619	202	821	815	821	65	11	26	26
1910	181	44	225	52	14	66	38	23	61	3	3	6	655	206	861	655	206	861	851	861	65	11	26	26
1911	161	62	223	72	10	82	62	27	89	6	6	12	685	225	910	685	225	910	896	910	65	11	26	26
1912	178	69	247	83	21	104	62	31	93	2	5	7	697	243	940	697	243	940	929	940	65	11	26	26
1913	201	64	265	95	19	114	76	33	109	6	6	12	729	239	968	729	239	968	965	968	65	11	26	26
1914	286	61	347	81	13	94	68	35	103	3	1	4	797	262	1,059	797	262	1,059	1,040	1,059	65	11	26	26
1915	229	91	320	87	24	111	65	37	102	1	1	2	902	295	1,197	902	295	1,197	1,173	1,197	65	11	26	26
1916	234	69	303	77	22	99	58	35	92	2	3	5	936	301	1,237	936	301	1,237	1,219	1,237	65	11	26	26
1917	206	62	268	72	15	87	57	49	76	2	1	3	956	311	1,267	956	311	1,267	1,253	1,267	65	11	26	26
1918	247	71	318	69	10	79	59	52	66	3	1	4	1,009	332	1,341	1,009	332	1,341	1,325	1,341	65	11	26	26
1919	213	67	280	70	20	90	50	27	77	4	2	6	1,049	322	1,371	1,049	322	1,371	1,373	1,371	65	11	26	26

Summary of total admissions.

	Male.	Female.	Both sexes.
Percentages of cases recovered	39.80	27.25	37.32
Percentages of cases improved	14.66	18.98	15.51
Percentages of cases unimproved	2.29	4.64	2.76
Percentages of cases died	25.41	27.46	25.82
Percentages of cases remaining	17.84	21.67	18.59
	100.00	100.00	100.00

The admission for the year ending June 30, 1889, have been 280; the discharges, including 114 deaths, have been 244, leaving 1,397 under treatment at the close of the year. The recoveries are reported as 70, being 28.69 per cent. of the discharges, including deaths. The daily average number in the hospital has been 1,373, which shows a steady increase in its population. The per cent. of deaths to the daily average number resident is 8.30, which is very nearly the average per cent. for the last ten years and is considerably below what the advanced age of so large a proportion of the hospital inmates would lead us to expect. The veterans of the late war continue to be received in undiminished numbers from the Home for Disabled Volunteer Soldiers, although each returning season thins their ranks in the outside world and adds to the burden of years of the survivors. How long the increased number of admissions from the home will continue it is impossible to foretell, but, probably, it will be some years yet before the advancing mortality will more than counterbalance the increase in mental disease, resulting from the infirmities of age conjoined with that inertia of life and loss of ambition and energy which seems to be inseparable from those conditions that compel the old soldier to take refuge in that asylum.

The increase in the number of patients from the District of Columbia has not been as great as in one or two former years. While a temporary diminution in the number of admissions has probably resulted from an embarrassment from want of appropriations in defraying the expenses of the jury trial which the decision of the court in regard to the law of commitment has rendered necessary, probably more is due to a commendable energy on the part of the District authorities in returning to the several homes from whence they had set out the lunatics of varying degree who come from the East and from the West and from the North and from the South, to make Washington their headquarters. Whoever has a grievance, or a new scheme of government, or a call to enlighten Congress, or to help the President in his appointments, or a new gospel to proclaim, all these and as many more go to swell the tide which is constantly setting in towards the District of Columbia, a tide that, unlike all other tides, never of its own accord turns out to sea. But for the vigilant watch and prompt action of the authorities in returning these people with a mission to the neighborhoods whence they sprung, the rural districts would shortly be depleted of their insane, while this hospital was being overcrowded with them.

Of the additional accommodations that have been recently made, and the advantages resulting to the hospital therefrom, a word is proper here. The extensions of the lodges for the colored insane, particularly that for the females, seems to have made an actual change in the character of many of the patients. Crowded into insufficient quarters they

had grown careless, noisy, and destructive in habits, requiring more or less seclusion and restraint, until both attendants and physicians had accepted the situation as the inevitable, and the best that could be done. Now, changed to new quarters, with their light common dining hall, their fresh and trim associate dormitories and rooms, with everything quiet and orderly about them, they have gone to work, have forgotten to be noisy and destructive, the change in their quarters having wrought in them a notable change for the better, an improvement in those chronic, turbulent cases beyond what we had dared to hope.

The convict and criminal class of the insane, including military prisoners, now constitute a considerable item of the population, being 63 in number. It is clear that Howard Hall, the building erected for this class of our inmates, was not opened a day too soon.

This building has accommodation for 60 patients in single rooms, and already we notice here something of the same improvement in conduct and condition so marked in the case of the colored female insane. They are more securely kept, but they have their work room and their smoking room, and therein grow content. The defect is that the building is not large enough for the prospective increase of the classes for whom it is intended to provide. Howard Hall as at present constructed is really but one-half of the plan as originally projected. It is in contemplation in the near future, as the urgent need becomes apparent, to ask appropriations to add a building corresponding very nearly to the present one, which will give to the completed Howard Hall the form of a hollow square, inclosing a perfectly secure ground where the inmates can be at will in the open air and sunshine. Here they can grow plants, keep their pet birds and animals, and make it their home. With the accommodations thus augmented to one hundred and twenty single rooms, it will be possible to make liberal and humane provision for all the convict class entirely distinct from the so-called criminal, and that again distinct from the homicidal and dangerous element against whom no crime is charged, for all of whom Howard Hall will then afford secure asylum.

The wise liberality of the last Congress has provided a pavilion for the sick with all the light and air and varied appliances for their care which are found in the best modern general hospitals, a building whose erection is now being rapidly pushed forward, which when completed and occupied will afford solace and healing to the sick, as well as relief to the others by their removal from the common wards. The great need for an infirmary annex for the feeble and the sick in their early convalescence is only too apparent and the request for the same, together with a full discussion of its merits, will be found under the head of estimates for the coming fiscal year.

It is no longer a question whether more accommodations are to be built—the steady increase in population has settled that—but what form shall such additional accommodations take? What is the annual increase in the number of the insane for whom this provision must be made? In the community at large we may estimate it at one hundred and twenty-five for every million of the inhabitants. The Government hospital is exceptional in this, that, aside from the District of Columbia, whose population for the purposes of this inquiry may be considered a quarter of a million, it receives its accessions from classes of the service that are nearly stationary in numbers, and of which such annual increase can not be predicated. There is, however, a constant increment from the Home for Disabled Volunteer Soldiers and from the District

of Columbia. Taking the record of the last ten years we find the lowest gain in the daily annual average was thirty-four, and the highest one hundred and twenty-eight. Omitting the latter, which was in 1884-'85 and due to the change in the law admitting the inmates of the home, we find the average annual increase for each year to be almost exactly 4 per cent., which means provision for an annual increase of accommodations to the extent of fifty beds. It is important that this additional accommodation each year should take the form which will afford the most perfect classification and hence the greatest relief to the whole.

The following table of farm products shows what has been taken from the farm for the hospital during the fiscal year 1889.

Table of farm and garden products.

Apples, 211½ bushels at 50 cents	\$105.75
Asparagus, 2,030 bunches, at 6 cents.....	121.80
Beans (string), 508½ bushels, at 75 cents	381.37
Beans (Lima), 228 bushels, at \$1.30.....	296.40
Beets, 335 bunches, at 2 cents	6.70
Beets, 421 bushels, at 70 cents.....	294.70
Cabbage, 49,498 heads, at 8 cents.....	3,959.84
Cabbage sprouts, 317 barrels, at \$1	317.00
Cantaloupes, 9,748, at 8 cents	779.84
Carrots, 719 bunches, at 2 cents.....	14.38
Carrots, 56½ bushels, at 50 cents.....	28.25
Chickens, 235 pounds, at 12 cents.....	28.20
Corn (green ears), 1,564½ dozen, at 15 cents	234.62
Cucumbers, 1,597 dozen, at 10 cents	159.70
Currents, 462 quarts, at 15 cents.....	69.30
Celery, 16,458 bunches, at 5 cents.....	822.90
Ducks, 111 pounds, at 12 cents.....	13.32
Egg plants, 4,234, at 6 cents.....	254.04
Eggs, 1,589½ dozen, at 20 cents	317.90
Figs, 24 quarts, at 25 cents.....	6.00
Grapes, 9,715 pounds, at 5 cents.....	485.75
Geese, 4, at \$1	4.00
Honey, 200 pounds, at 20 cents	40.00
Kale, 335 barrels, at \$2.....	670.00
Leeks, 2,885 bunches, at 3 cents	86.55
Lettuce, 18,496 heads, at 3 cents.....	554.88
Milk, 63,989 gallons, at 25 cents	15 997.25
Onions, 36 bushels, at 65 cents.....	23.40
Onions, 12,987 bunches, at 2 cents.....	259.74
Onion (sets), 25 bushels, at \$4.....	100.00
Oyster plant, 2,100 bunches, at 3 cents	63.00
Parsley, 6,240 bunches, at 2 cents.....	124.80
Parsnips, 398 bushels at 75 cents.....	298.50
Peaches, 283½ bushels, at \$2	567.00
Peas, 174½ bushels, at \$1.....	174.25
Peppers, 25½ bushels, at \$1	25.50
Pork, 8,735 pounds, at 7 cents.....	611.45
Potatoes (Irish), 941 bushels, at 70 cents.....	658.70
Pears, 23½ bushels, at \$1.50.....	35.62
Plums, 1½ bushels, at \$2.....	2.50
Quinces, 29 bushels, at \$2.50	72.50
Rhubarb, 4,442 bunches, at 2 cents	88.84
Radishes, 4,973 bunches, at 2 cents	99.46
Sweet potatoes, 436 bushels, at 75 cents.....	327.00
Summer squash, 2,943, at 1 cent	29.43
Strawberries, 2,007 quarts, at 12 cents	240.84
Turnips, 1,357 bushels, at 45 cents.....	624.15
Tomatoes, 2,179½ bushels, at 50 cents.....	1,080.75
Sale of stock.....	705.25
Total.....	32,272.12

The following products consumed on the farm can not be considered a part of the profits :

Corn fodder (green), 10 acres, at \$35	\$350.00
Corn fodder (dry), 20 tons, at \$15	300.00
Corn, 26 barrels, at \$2.50	65.00
Grass (green), 20 acres, at \$35	700.00
Hay, 300 tons, at \$13	3,900.00
Kale, 209 barrels, at \$2	418.00
Parsnips, 69 bushels, at 50 cents	34.50
Rye (dry), 100 tons, at \$13	1,300.00
Rye (green), 15 acres, at \$35	525.00
Turnips, 469 bushels, at 45 cents	211.05
Total	7,803.55

The production of the farm varies somewhat from year to year, being affected by the varying seasons of drought or deluge, yet, taking one crop with another, it is plain that the productiveness is increasing and that it is a most valuable adjunct to the hospital. Its great value is as a dairy farm in affording milk for the inmates. Very much of the forage produced is converted into this as a final product, hence these crops are not included in the table of total value of farm products. It will be seen that the milk value is nearly one-half of the whole. The need for new sites for buildings and their grounds has seriously encroached upon lands formerly planted in crops, so that an urgent necessity exists for more territory for grass lands and grazing, as is fully set forth in the estimates. That the management of the farm is making it more productive rather than impoverishing it will be made clear by some comparisons with the results of ten years ago. The herd of milch cows has been considerably increased—thanks to our new barn—but no new territory has been added, and the small portions hitherto in woodland that have been brought into cultivation are more than offset by the grounds taken from the farm as sites for the detached buildings. In 1879 the milk product, 31,461 gallons, valued at 28 cents a gallon, amounted to \$8,809.08. In 1889 it was 63,989 gallons, or more than double the amount in 1879, which, valued at 25 cents a gallon, amounted to \$15,997.25. The tomato crop in 1879 was 813 $\frac{3}{4}$ bushels; in 1889, 2,179 $\frac{1}{2}$ bushels. The cabbages in 1879 amounted to 16,393 heads; in 1889, to 49,498 heads. On the other hand, there were 498 bushels of peas in 1879 against 174 $\frac{1}{4}$ bushels in 1889, and a pork product of 17,931 pounds in 1879 against only 8,735 pounds in 1889, a decrease from hog cholera. But, taking the total valuation of the products, outside of hay and forage not included, the estimate being at market prices as near as could be ascertained, that of 1879 was \$17,571.89 and that of 1889 was \$32,272.12, showing that farm land is valuable to the hospital and should be increased.

The question of the wages paid to the attendants on the insane having been considered in the committees of the last Congress and having been finally practically left, as it always has been, for the hospital authorities to determine, they, after a careful study of the subject in all its relations and bearings, have adopted a scale of wages which it is thought will be a satisfactory solution of the whole matter, and afford by its graded service intelligent and efficient supervision and care of the insane.

ESTIMATES FOR THE FISCAL YEAR ENDING JUNE 30, 1891.

The estimates for expenditures for the fiscal year ending June 30, 1891, are :

For current expenses	\$313,500
For general repairs and improvements	15,000

For special repairs and improvements, viz :

Lodge at lower entrance.....	\$2,000
Infirmary wing, with connections.....	36,000
Completing changes in heating apparatus, including new chimney and boiler-house.....	8,000
Extension of kitchen and furnishing same.....	5,000
Rebuilding carpenter and machine shop.....	4,000
For additional agricultural land.....	10,000

The estimate for current expenses is for support in the hospital, including treatment and clothing, of an estimated average number of 1,425 indigent insane persons who by law are entitled to treatment here, viz, the insane of the Army and Navy, Marine Corps, Revenue-Cutter Service, National Home for Disabled Volunteer Soldiers, the indigent insane of the District of Columbia, and the United States convict insane. Some classes entitled by law to treatment here, but whose expenses are defrayed from other sources, are not included in this enumeration. The basis of estimate is an annual per capita cost of \$220. Congress has of late provided for a portion of this expenditure in the bill making appropriations for the District of Columbia. The amount in the last bill was \$85,000. Based on the ratio of increase of inmates from the District during the past year the amount to be appropriated in this bill will be \$87,500, leaving the sum of \$226,000 to be provided in the sundry civil bill, of which sum it is asked that not exceeding \$1,500 may be used as hitherto, in defraying the expense of the return of patients to their friends.

For general repairs and improvements \$15,000 is asked. This sum is needed to renew from time to time what is worn out, to introduce whatever new appliances experience has shown to be desirable in the care and treatment of the insane and for the daily repairs that are necessary to keep this vast extent of floors and ceilings and walls in a sound and sanitary condition, thus preserving them from deterioration and decay.

Under the head of special repairs and improvements \$2,000 is asked to place at the lower entrance a cottage to be used as a porter's lodge. This is necessary to the proper custody of the place. The amount asked will build a small but tasteful cottage of brick sufficient for the purpose indicated and in keeping with the surroundings.

The statistics of the hospital for the last ten years show that it is necessary each year to provide additional accommodations for fifty patients. The hospital pavilion for the sick, now rapidly progressing towards completion, will furnish, within the present fiscal year, accommodations for fifty of the sick and paralytic class, which will give a degree of relief to our crowded wards that the same amount of provision could afford in no other way. It is apparent, however, as the work progresses, that an adjoining infirmary wing for the feeble ones and the convalescents risen from their hospital beds, but still too infirm to return to the common wards, a wing, with broad piazzas open to the sunshine and air, is especially needed in connection with the hospital pavilion; and since it is imperative to provide fifty additional beds somewhere it is good economy to make that provision where in the present as well as in the future development of the institution it will do the most good. A connection, by an underground arched way, with the main building is indispensable for convenience in conveying material and inmates to and from the infirmary group as well as for efficient supervision of the whole; \$36,000 is asked to complete, for fifty beds, this remaining wing of the pavilion, together with the necessary connections with the hospital.

For completing the changes in the heating apparatus of the old building, appropriation for one wing of which has been made in the present year, \$8,000 will be needed. This includes changes in boiler-house and a new smoke-stack for the additional boilers required.

The sum of \$5,000 is asked for extension of the kitchen, with the furnishing of the same. When the appropriation for a detached kitchen was made in 1882 the hospital contained 942 inmates, and it was a question if the projected new kitchen was not extravagantly large. Now, with the number of patients already exceeding 1,400, the necessity for extension is apparent. The contemplated change, which it is thought can be made for the estimate, will give ample cooking accommodations for 2,000 persons, a number beyond which it is hoped the hospital will never be called on to provide.

The carpenter and machine shop, built in 1856, upon ground that did not afford a sure foundation, has been in almost daily use ever since, and with the constant jar of the machinery and the gradual settling of the walls, cracks have appeared in the brick-work which are visibly widening, making it unsafe to introduce any additional machinery, and necessitating its being taken down and rebuilt on a firm foundation and an enlarged plan better suited to the present wants of the hospital. Four thousand dollars will be needed for this purpose.

For the purchase of additional agricultural land, \$10,000. This hospital, with 1,400 patients, has barely 200 acres of land available for farming, gardening, and grazing purposes. The remainder is occupied with lawns and groves and sites of buildings devoted to the care of the insane, together with a considerable portion in wooded ravines whose cultivation is out of the question, but which are the charm of the grounds, affording secluded and delightful walks for the inmates. A great majority of the patients belong to the chronic class, for whom the best treatment is work about the grounds at farming or gardening. With sufficient arable land of good quality there is no reason why all vegetables consumed by the inmates, except rice, should not be produced on the hospital farm, and a considerable part of the labor of cultivation be that of the insane. Idle men, sane or insane, are seldom happy; those who have steady occupation are generally content. All alienists are agreed on the importance of keeping the insane occupied, and that farm labor is the best employment for a majority of the male population of an asylum. All authorities also agree that hospital grounds should be of an extent of 1 acre of land for each inmate. The Government Hospital has 1,400 inmates and 400 acres. When it is remembered that the herd numbers more than 100 milch cows and a proportional number of young cattle, the pressing need of more territory for pasturage and grass lands is apparent. It is not essential that land for this purpose should be adjacent to the hospital buildings. Outlying fields that may still be purchased at the price of agricultural land will do very well, but it is important that these be secured at once before the advance in all real estate in the vicinity of Washington leaves nothing but house lots available for pasturage. Ten thousand dollars ought still to secure a good extent of agricultural land within easy access to the hospital.

The vacancy in the night medical service resulting from the resignation of Dr. Kenney has been acceptably filled by the appointment of Dr. Charles H. Latimer, of Maryland, a young man who brings the record of some years of successful practice and the highest testimonials of character to this responsible work. The advantage of a night medical service in a large institution like ours is very apparent, and we are surprised that such service is not more generally adopted. Dr. Black-

burn continues to devote his time to pathological research, a work that is coming more and more to be recognized as a necessity in our American hospitals, and is beginning to receive something of the attention which it deserves from the officers in charge. Dr. Blackburn's summary of his studies appears in a supplement to this report. Also the report of Dr. Calver, dentist, containing a résumé of the important work done in his department, in caring for the teeth of the insane. The enlarged experience of the past year in this direction confirms the Board in their belief in the wisdom of this expenditure. Dr. Samuel R. Means, of Washington, has been doing useful work in careful clinical observations among the male patients, a field in which there is still much to be learned. The other members of the staff, for many years unchanged, have by faithful and intelligent labor, in fields grown familiar to them, done much to contribute to the successful results of the year.

To friends who have aided us in our concerts and dramatic entertainments, also with gifts of flowers, magazines, and books for the inmates, as well as pictures for our wards, our thanks are tendered. Such gifts are always acceptable, and books and magazines thus received find many to peruse their pages in our wards. Many persons after reading their magazine or summer story throw it aside and never think of it again. It would be better to notify the superintendent and let the hospital wagon call for them.

The work of the hospital grows with each year, bringing no common responsibility to those who bear it. It is not a light service, this caring for a township of the insane. But it is for us to make it worthy as a nation's charity, and for Congress by a wise liberality in providing for the every need of these afflicted ones to make our burdens light.

We are, very respectfully, your obedient servants,

J. M. TONER,
President.
W. W. GODDING,
Superintendent.

Hon. JOHN W. NOBLE,
Secretary of the Interior.

GOVERNMENT HOSPITAL FOR THE INSANE,
Washington, D. C., August 16, 1889.

SIR: In accordance with the act of Congress, approved June 4, 1880, requiring the Superintendent of the Government Hospital for the Insane to make a report to Congress annually of the detailed expenditures of the hospital for the preceding fiscal year, I have the honor to submit the following statement.

I am, sir, very respectfully, your obedient servant,

W. W. GODDING,
Superintendent.

Hon. JOHN W. NOBLE,
Secretary of the Interior.

Supplementary to June 30, 1888.

On hand, deficiency	\$2,251.61
EXPENDITURES.	
Live stock	\$650.00
Furniture fixtures, etc	766.89
Utensils, crockery, etc	499.00
Implements	325.00
Total	2,240.89
Disallowed	.78
Covered into United States Treasury on deficiency	9.94
	<u>2,251.61</u>

Detailed statement of receipts and expenditures for the fiscal year ending June 30, 1889.

RECEIPTS.	
Appropriation for support	\$201,315.00
Appropriation for District of Columbia	79,185.00
Appropriation for buildings and grounds	42,700.00
Appropriation for deficiency	11,000.00
On hand, buildings and grounds	23,611.98
Miscellaneous receipts	22,366.90
Total	<u>380,178.88</u>

EXPENDITURES.	
Subsistence :	
Flour, meal, and crackers	15,251.55
Ice	3,888.92
Butter, cheese, and eggs	17,596.29
Fresh meat	23,300.06
Salt and smoked meats	12,518.22
Fish and poultry	6,489.84
Tea and coffee	8,330.69
Sugar and molasses	8,525.63
Lard	959.22
Fruits and vegetables	6,926.62
Other groceries	9,147.53
	<u>112,934.57</u>
House furnishing, fuel, lights, etc. :	
Furniture, fixtures, etc	3,526.37
Bedding	8,220.05
Table and towel linen	857.02
Utensils, crockery, etc	2,215.93
Kitchen fittings	194.28
Laundry supplies	3,142.91
Carpets	463.52
Hard coal	2,051.45
Soft coal	9,953.71
Lights, oils, etc	1,589.78
Making brooms	179.11
Wood	421.29
	<u>32,815.42</u>
Dry goods and clothing, books, stationery, and miscellaneous :	
Boots, shoes, and slippers	3,009.32
New clothing	1,348.86
Clothing material	7,221.18
Hats	342.75
Notions	991.18
Books and periodicals	610.00
Stationery and postage	708.38
Freight and hauling	314.30
Incidental work, etc	143.86
Advertising	48.85
Electrical instruments	148.95
Photographic instruments, etc	38.57
	<u>14,926.20</u>

Medical supplies, expended for amusement of patients, etc.:		
Drugs, medicines, etc.....	\$1,961.87	
Alcoholic stimulants.....	1,121.53	
Instruments, etc.....	134.14	
Returning eloped patients.....	177.20	
Amusement of patients.....	1,450.64	
Sending to their homes.....	246.06	
Refunded board money.....	2.00	
Pathological supplies.....	208.25	
Dental supplies.....	53.92	
		\$5,355.61
Farm, garden, and stable:		
Feed.....	8,892.32	
Implements, horseshoes, etc.....	884.34	
Plants and seeds.....	574.18	
Manures.....	591.39	
Live stock.....	565.00	
Harness and repairs.....	683.19	
Vehicles and repairs.....	2,092.35	
Hay and straw.....	2,249.66	
Incidental expenses.....	67.49	
		16,599.92
Repairs and improvements:		
Lumber, doors, etc.....	4,762.67	
Hardware, etc.....	2,070.15	
Engineers and plumbers' supplies.....	6,234.03	
Paints, oils, glass, etc.....	1,831.93	
Roofing.....	914.02	
Iron work, etc.....	2,633.46	
Plastering.....	273.15	
Sundry small repairs, etc.....	1,060.20	
Fire and other apparatus.....	746.50	
Mason's supplies.....	3,782.70	
Buildings.....	8,275.93	
		32,584.74
Salaries and wages:		
Superintendents, physicians, and general office.....	16,902.26	
Ward service.....	45,070.76	
Inside domestic department.....	14,990.54	
Engineer's department.....	9,155.45	
Farm and garden, hauling coal, drivers, etc.....	24,306.61	
Mechanics and helpers.....	19,262.47	
Making clothing.....	2,102.23	
Laundry.....	5,224.71	
Sunday service.....	500.00	
		137,515.03
Covered into United States Treasury on buildings and grounds.....		2.32
On hand, buildings and grounds.....		27,417.15
On hand, deficiency.....		27.92
Total.....		380,178.83

Classified expenditures Government Hospital for the Insane, for fiscal year ending June 30, 1888 (supplementary).

Date.	Furnished by—	On voucher num- bered—	Live stock.	Furniture, fi x- tures, etc.	Utensils, crockery, etc.	Implements.	Grand total.
1888.							
June 30	William Fairweather.....	881	\$650.00				
30	J. G. Bates.....	882		\$32.50			
30	Bramhall, Deane & Co.....	883			\$92.00		
30	Broman, Dow & Co.....	884			407.00		
30	Rowley & Hermance.....	885				\$325.00	
30	Wash. B. Williams.....	886		386.00			
30	Julius Lansburgh.....	887		348.39			
	Total.....		650.00	766.89	499.00	325.00	\$2,240.89

31	George M. Oyster & Co	83	1,088.04																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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Classified expenditures, Government Hospital for the Insane, for fiscal year ending June 30, 1889—Continued.

SUBSISTENCE—Continued.

Date.	Furnished by—	On voucher num-bered—	Flour, meal, crack-ers, etc.	Ice.	Butter, cheese, and eggs.	Fresh meat.	Salt and smoked meats.	Fish and poultry.	Tea and coffee.	Sugar and molas-ses.	Lard.	Fruits and vege-tables.	Other groceries.	Grand total.
1888.														
ec. 31	Poole & Brooke.....	349			\$70.80				\$81.27				\$104.59	
31	Thurber, Whyland & Co.....	352					\$439.81		573.04				146.46	
31	G. G. Cornwell & Son.....	356	\$405.38							\$340.71			600.07	
31	Schafer & Clary.....	364										\$30.00		
31	Andrews & Wade.....	365										519.78		
31	Great Falls Ice Company.....	366		\$621.89										
31	Willis Worster.....	368										79.00		
31	Frank Hume.....	370			189.23			\$134.51	486.05	724.96			316.26	
1889.														
Jan. 9	Mar'a Wormley.....	381			3.52									
31	W. R. Smallwood.....	410						2.70						
31	James F. Oyster.....	415			1,166.70									
31	Frank Hume.....	426			138.15			142.60	713.37	555.87			483.58	
31	Browning & Middleton.....	461	75.07							34.50		374.48		
31	H. L. Strang.....	462												
31	W. M. Galt & Co.....	468	243.50											
31	Bert R. Scannell.....	483				\$4,135.43	600.78							
Feb. 28	McAfee Bros.....	519										433.14		
28	James L. Barbour & Son.....	520	25.20		1,168.00					69.31			148.68	
28	Gambrill Manufacturing Com-pany.....	521	3,041.50											
28	James F. Oyster.....	525			1,015.47									
28	Thomas O. Varnell.....	526				64.30	1,665.98				\$215.43			
28	Frank Hume.....	530			199.67				277.91	1,037.64		30.35	184.19	
28	Rabbitt & Crown.....	531					447.02							
28	Bert R. Scannell.....	532				2,297.48								
28	E. J. Adams & Co.....	535										105.00		
28	Andrews & Wade.....	538										495.20		
Mar. 15	S. K. Winans.....	556												
15	A. J. Fouch & Co.....	557						3.00						
15	Fred. Oefinger.....	558						7.50						
15	H. D. Kendall.....	559						1.50						
18	J. A. Chelton.....	566						5.00						
18	G. W. Randolph.....	567						6.00						
22	M. B. Cloud.....	574						6.50						

30	W. W. Conner	593																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	</
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Classified expenditures, Government Hospital for the Insane, for fiscal year ending June 30, 1889—Continued.

SUBSISTENCE—Continued.

Date.	Furnished by—	On voucher num- bered—	Flour, meal, crack- ers, etc.	Ice.	Butter, cheese, and eggs.	Fresh meat.	Salt and smoked meats.	Fish and poultry.	Tea and coffee.	Sugar and molas- ses.	Lard.	Fruits and vege- tables.	Other groceries.	Grand total.
1889. June 29	Bert. R. Scannell.....	826	.....	.....	.....	\$1,545.16	\$324.94	.....	.....	.....	.....	.....	.....	.....
29	Kingsley Bros.....	835	.....	.....	\$283.20	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	Rider & Addison.....	844	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	\$6.51	.....
29	Brown Bros.....	850	.....	.....	.....	.....	.....	.....	.....	.....	.....	\$39.75	.....	.....
29	Robert D. Weaver & Brothers.....	856	.....	.....	.....	23.60	.....	.....	.....	.....	\$52.54	.....	.....	.....
29	Thomas O. Varnell.....	857	.....	.....	.....	.....	955.77	.....	.....	.....	.....	.....	.....	.....
29	James F. Oyster.....	860	.....	.....	764.25	.....	.....	\$115.58	.....	.....	.....	145.32	.....	.....
29	Rabbitt & Crown.....	867	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Total.....	.....	\$15,251.55	\$3,888.92	17,596.29	23,300.06	12,518.22	6,489.84	\$8,330.69	\$8,525.63	959.22	6,926.62	9,147.53	\$112,934.57

Classified expenditures—Continued.
HOUSE FURNISHING, FUEL, LIGHTS, ETC.

Date.	Furnished by—	On voucher numbered—	Furniture, fixtures, etc.	Bedding.	Table and towel linen.	Utensils, crockery, etc.	Kitchen fittings.	Laundry supplies.	Carpets.	Hard coal.	Soft coal.	Wood.	Lights, oils, etc.	Making brooms.	Grand total.
1888. July 31	William Beaman	23							\$40.40					\$20.70	
31	J. H. Peake	25													
28	Jerry Hodge	169		\$8.80											
31	Wash B. Williams	170	\$276.30												
31	Julius Lansburgh	171	75.00					\$11.75					\$11.20		
Aug. 31	James L. Barbour & Son	76													
31	Woodward & Lothrop	86		85.00											
28	C. A. Wissing	181		300.00											
31	D. Knowlton	182		175.00							\$9,911.71				
Sept. 29	J. M. Wheatley	96													
29	Rider & Addison	98		1,566.92								\$71.80			
29	T. B. Middleton	135													
29	Charles H. Nicolai	136						47.51					268.95		
29	American Multiple Fabric Co.	137						402.81							
29	Julian Rosenblatt	139													
29	Thomas G. Hood	147		1,560.69	\$57.97										
29	R. A. Robbins	148		365.84	45.89	\$19.80		18.50							
29	J. C. Ergood & Co.	156						33.80							
29	M. W. Beveridge	160				349.96									
29	William Sellers & Co.	*8						18.29							
29	C. A. Wissing	29	33.00												
29	Edward Hurlburt	176						60.00							
Oct. 8	William Beaman	184								\$2,051.45				16.80	
22	Arthur B. Smith	199													
29	John Early & Co.	206													
31	Walter B. Williams	210	90.70			357.69									
31	H. Hoffa	212	7.00												
31	A. P. McElroy & Co.	221	33.04				\$23.00								
31	W. H. Harrover	222													
Nov. 20	William Beaman	253													
30	George J. Johnson	272		487.05	188.25									18.00	
30	B. T. Babbitt	274						160.00							

Classified expenditures—Continued.

HOUSE FURNISHING, FUEL, LIGHTS, ETC.—Continued.

Date.	Furnished by—	On voucher numbered—	Furniture, fixtures, etc.	Bedding.	Table and towel linen.	Utensils, crockery, etc.	Kitchen fittings.	Laundry supplies.	Carpets.	Hard coal.	Soft coal.	Wood.	Lights, oils, etc.	Making brooms.	Grand total.
1889.															
May 31	S. S. Shedd & Bro.	764	\$30.25								\$10.00				
May 31	J. M. Wheatley	773													
June 29	Charles H. Nicolai	797				\$204.23							\$294.25		
June 29	John Early & Co.	799													
June 29	Union Oil Company	800						\$59.16							
June 29	B. T. Babbitt	801						195.28							
June 29	W. B. Moses & Son	812	9.70						\$96.80						
June 29	M. W. Beveridge	813				95.41									
June 29	James L. Barbour & Son	820											14.70		
June 29	J. C. Ergood & Co.	822						13.00							
June 29	W. H. Harrover	832					\$6.00								
June 29	M. G. Copeland & Co.	841	4.55												
June 29	Wilmarth & Edmonston	846				51.62									
June 29	Washington Gas Light Co.	853						6.00							
June 29	Lansburgh & Bro.	859			\$7.78										
June 29	W. B. Moses & Son	236	22.25												
June 29	Julius Lansburgh	869	36.37						79.96						
June 29	E. G. Wheeler	870				18.04									
	Total.....		3,526.37	\$8,220.05	857.02	2,215.93	194.28	3,142.91	463.52	\$2,051.45	9,953.71	\$421.29	1,589.78	\$179.11	\$32,815.42

Classified expenditures—Continued.

DBY GOODS AND CLOTHING, BOOKS, STATIONERY, AND MISCELLANEOUS.

Date.	Furnished by—	On voucher numbered—	Boots, shoes, and slippers.	New clothing.	Clothing material.	Hats.	Notions.	Books and periodicals.	Stationery and postage.	Freight and hauling.	Incidental work, etc.	Advertising.	Electrical instruments.	Photographic instruments, etc.	Grand total.
1888.															
July 17	Lea Bros. & Co.	3			\$6.53			\$5.00							
23	Samuel Beiber	7													
25	A. F. Brooke	9						2.75							
26	J. Baumgarten & Son	13							\$1.50						
31	George W. Knox	26								\$4.18					
31	Baltimore & Ohio Express Company	27								1.20					
31	Adams Express Company	28								.65					
31	Chesapeake & Potomac Telephone Co.	35											\$100.00		
27	Washington Post	155										\$6.00			
27	Daily National Republican	156										7.00			
27	The Evening Star	157										9.15			
27	Lee Crandall	158										6.30			
27	The Sunday Herald	159										5.41			
27	T. G. Morrow	160										6.50			
27	Washington Post	164										3.37			
27	The Capital	165										1.12			
27	Washington Critic	166										4.00			
Aug. 4	Lamb Knitting Machine Manufactur-														
	ing Company	44									\$2.44				
6	R. C. Jones	47						6.00							
31	Adams Express Company	77								3.40					
31	Woodward & Lothrop	86			181.74										
31	George W. Knox	95								16.56					
Sept. 12	J. Baumgarten & Son	103							1.50						
29	Washington City Post-Office	127							44.00						
29	Department of the Interior	128							42.07						
29	Department of the Interior	129							.24						
29	Baltimore & Potomac Railroad Co.	131								.30					
29	Adams Express Company	132								2.10					
29	George W. Knox	133								16.97					
29	G. Alder Blumer	139						5.00							

Classified expenditures—Continued.

DRY GOODS AND CLOTHING, BOOKS, STATIONERY AND MISCELLANEOUS—Continued.

Date.	Furnished by—	On voucher numbered—	Boots, shoes, and slippers.	New clothing.	Clothing material.	Hats.	Notions.	Books and periodicals.	Stationery and postage.	Freight and hauling.	Incidental work, etc.	Advertising.	Electrical instruments.	Photographic instruments, etc.	Grand total.
1888.															
Sept. 29	Thomas G. Hood.....	147			\$1,967.06										
29	R. A. Robbins.....	148			647.52		\$10.41								
29	T. G. Morrow.....	150						\$18.33							
29	Jeanette Blum.....	162					195.48								
29	The Washington Post.....	163						23.31							
29	A. L. Williston.....	175						\$120.00							
Oct. 5	William B. Pearce.....	180						2.00							
8	R. C. Jones.....	185						6.00							
9	P. A. Connell.....	186					1.25								
19	S. Oppenheimer & Bro.....	193					5.00								
31	United States Express Company.....	209								\$0.50					
31	Adams Express Company.....	215								.50					
31	George W. Knox.....	216								59.75					
31	E. Morrison.....	224							27.37						
31	James J. Chapman.....	226						42.20							
31	Auerbach & Bro.....	227		\$141.25									\$14.40		
Nov. 31	J. U. Burket & Co.....	229		268.86											
30	George J. Johnson.....	272													
30	James R. Michael.....	276			363.01										
30	Lansburgh & Bro.....	279			668.85		156.54								
30	William Hahn & Co.....	282	\$77.87												
30	Woodward & Lothrop.....	285			73.00										
30	Baltimore & Potomac Railroad Co.....	288								38					
30	George W. Knox.....	289								38.78					
30	United States Express Company.....	290								.25					
30	Adams Express Company.....	291								2.40					
Dec. 4	L. D. Williams.....	300						18.00							
7	R. C. Jones.....	306						7.00							
22	J. L. Shaw.....	326						6.00							
26	Augustus Thomas.....	328													
27	W. H. Moore.....	330			1,108.23			158.05							

No.	Name	Jan.	Feb.	Mar.	Total
28	United States Express Company	334			5.00
29	T. G. Morrow	336			18.30
29	The Washington Post	337			28.86
31	Washington City Post-Office	340			59.00
31	George W. Knox	341			10.33
31	Adams Express Company	342			1.60
31	United States Express Company	343			.95
31	S. Bensinger	345			25.00
31	Department of the Interior	348			31.03
31	R. A. Robbins	353			
31	Thomas G. Hood	354			10.15
31	Robert Cohen	355			
380	R. C. Jones				8.00
388	George Prender				5.00
398	A. C. McKnight	249.25			
407	Baltimore and Ohio R. R. Co.				6.14
417	S. Bieber	425.00			
421	James R. Michael				
422	B. Rich & Sons	1,172.10			1.45
427	Adams Express Company				12.02
428	George W. Knox				4.60
429	Baltimore and Potomac R. R. Co.				
431	Lamb Knitting Machine Manufac-				
433	ing Company				
440	J. U. Burket & Co.				12.60
442	Woodward & Lothrop				
446	William Ballantyne & Son				22.84
450	Meyer Joseph				
451	E. G. Davis				22.50
452	James J. Chapman				
453	Chesapeake & Potomac Tel. Co.				11.95
466	E. Morrison				
478	Department of the Interior				
480	Auerbach & Bro	513.75			.55
481	United States Express Company				
484	Washington Post				5.00
505	M. E. Pierce				12.00
507	R. C. Jones				
524	Z. D. Gilman				9.62
527	Adams Express Company				
528	Baltimore and Potomac R. R. Co.				8.30
529	George W. Knox				44.53
537	Jeanette Blum				8.44
540	Thomas Songster				\$52.25
541	United States Express Company				.60
551	S. Sanson				9.60
562	Charles S. Cudlip				
568	Lewis S. Hayden				5.00
587	T. G. Morrow				21.87
588	Charles C. Fulton & Co.				9.21
595	Washington City Post-Office				44.00

June 28	L. J. Shaw.....	781
29	Washington City Post-Office.....	788
29	Adams Express Company.....	804
29	The Washington Post.....	823
29	Auerbach & Bro.....	825
29	The Capital.....	830
29	Wm. Ballantyne & Son.....	833
29	E. Morrison.....	836
29	James J. Chapman.....	840
29	Robert Cohen.....	843
29	Jeanette Blum.....	845
29	Meyer Joseph.....	847
29	T. G. Morrow.....	851
29	Saks & Co.....	855
29	W. W. Godding, superintendent.....	873
	Total.....	3, 009.32 \$1, 348.86 7, 221.18 342.75 991.18 610.00 708.38 314.30 143.86 \$48.85 148.95 \$38.57 \$14, 926.20

Classified expenditures—Continued.
MEDICAL SUPPLIES, EXPENDED FOR AMUSEMENT OF PATIENTS, ETC.

Date.	Furnished by—	On voucher numbered—	Drugs, medicines, etc.	Alcoholic stimulants.	Instruments, etc.	Returning eloped patients.	Amusement of patients.	Sending to their homes.	Refunded board money.	Pathological supplies.	Dental supplies.	Grand total.
1888.												
July 14	J. D. Butler	1				\$5.00						
16	Thomas Swan	2				5.00						
20	Elmer Howard	4				5.00						
21	Nora Barrett	6					\$4.40					
31	G. G. Cornwell & Son	30		\$46.08								
9	Charles Hopkins	40						\$21.00				
15	John R. Willis	41						15.00				
17	Timothy O'Malley	42						12.11				
Aug. 5	G. F. Fredrick	46				5.00						
10	C. Kades	48				5.00						
27	H. Wagner	67					10.50					
31	Jacob Beacham	74				5.00						
31	Jas. L. Barbour & Son	76	\$225.50	308.51								
31	G. G. Cornwell & Son	85		75.37								
31	Frank Hume	88		24.75								
Sept. 28	L. P. Weedon	113					5.40					
28	J. C. Smith	114				5.00						
29	Robert L. Davis	118					2.30					
29	George W. Henson	119				5.00						
29	Jas. W. Queen & Co.	140								\$22.75		
29	Thurber, Whyland & Co.	143		153.33								
29	E. F. Houghton & Co.	144	36.00									
29	Price Manufacturing Company	145	91.31									
29	E. E. White	157		24.00								
29	Browning & Middleton	161		7.00								
29	Daniel Loughran	165					412.55					
29	Melville Lindsay	166	57.00							21.50		
29	S. F. Ware	167	159.53									
29	Z. D. Gilman	168	154.49									
29	A. C. Patterson	169					41.61					
29	F. G. Perry	177								44.00		
Oct. 10	J. McMahon	187				5.00						

[illegible]

Classified expenditures—Continued.

MEDICAL SUPPLIES, EXPENDED FOR AMUSEMENT OF PATIENTS, ETC.—Continued.

Date.	Furnished by—	On voucher numbered—	Drugs, medicines, etc.	Alcoholic stimulants.	Instruments, etc.	Returning eloped patients.	Amusement of patients.	Sending to their homes.	Refunded board money.	Pathological supplies.	Dental supplies.	Grand total.
1889. Mar. 2	G. H. Pray	546					\$15. 00					
7	Harry B. Sweeney	550				\$5. 00						
20	John W. Hayes	571				5. 00						
25	Henry Eberbach	578					12. 85					
28	Henry Matthews	586				5. 00						
29	S. C. Elliott	591					4. 00					
30	A. C. Patterson, chief clerk.	594					36. 05					
30	G. G. Cornwell & Son.	599		\$94. 46								
30	T. H. McAllister	605					64. 95					
30	James W. Queen & Co	609					. 90					
30	Price Manufacturing Company	610	\$77. 24									
30	Parke, Davis & Co	613	22. 45									
30	N. W. Burchell	624	1. 00									
30	M. Silverberg & Co	625					11. 07					
30	S. F. Ware	630	113. 76									
30	George J. Mueller	639					118. 49					
30	Edward F. Droop	649					5. 65					
30	Melville Lindsay	659			\$0. 96							
Apr. 4	John F. Cox	676				5. 00						
24	L. G. Spencer	685					12. 50					
19	J. C. Simpson	718						\$41. 25				
May 8	Oscar King	725				5. 00						
9	James Ayres	727				5. 00						
9	W. D. Barry	728					22. 25					
24	James Johnson	739				5. 00						
31	Gideon Sibley	753									\$5. 50	
31	William M. Galt & Co	759	22. 32									
31	G. G. Cornwell & Son	765		46. 08								
14	George A. Price	771						13. 20				
27	A. H. Witmer	772						13. 75				
June 7	F. D. Cross	777				5. 00						
15	Samuel West	779				5. 00						

[illegible]

Classified expenditures—Continued.
FARM, GARDEN, AND STABLE—Continued.

Date.	Furnished by—	On voucher numbered—	Feed.	Implements, etc.	Plants and seeds.	Manures.	Live stock.	Harness and repairs.	Vehicles and repairs.	Hay and straw.	Incidental expenses.	Grand total.
1889.												
June 29	W. L. King & Bro	848						\$0.50				
29	John Saul	852			\$12 00							
29	Allison Nailor, jr	854				\$50.00						
29	Adams Express Co	858				37.50						
29	Thomas W. McKrew	868								\$68.48		
29	E. G. Wheeler	870		\$8.20				6.27				
29	R. H. Owens	871		4.25					\$107.70			
	Total		\$8,892.32	884.34	574.18	591.39	\$565.00	683.19	2,092.35	2,249.66	\$67.49	\$16,599.92

Classified expenditures—Continued.

REPAIRS AND IMPROVEMENTS.

Date.	Furnished by—	On voucher numbered—	Lumber, doors, etc.	Hardware, etc.	Engineers and plumbers' supplies.	Paints, oils, glass, etc.	Roofing.	Iron work, etc.	Plastering.	Sundry small repairs, etc.	Fire and other apparatus.	Masons' supplies.	Buildings.	Grand total.
1888. July 23	William H. Richards & Co	154	.....	.....	.....	.....	.....	.....	.....	.....	.....	\$78.50	.....	.....
31	J. H. Grant	161	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	\$3,400.00	.....
31	John T. Webster	162	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	L. H. Schneider & Son	167	.....	\$197.65	.....	.....	.....	.....	.....	.....	.....	562.50	.....	.....
31	Thomas Gray & Son	78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aug. 31	Daniel Shanahan	81	.....	.....	.....	\$649.36	.....	.....	\$8.50	.....	.....	.....	.....	.....
31	George A. Shehan	1	\$169.78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	Thomas W. Smith	2	20.23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	James H. Grant	172	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	Thomas Gray & Son	173	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,200.00	.....
31	Samuel Emery	174	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	George A. Sheehan	175	228.00	.....	.....	.....	.....	.....	.....	.....	.....	80.75	.....	.....
31	Thomas Gray & Son	177	.....	.....	.....	.....	.....	.....	.....	.....	.....	118.55	.....	.....
31	Willett & Libbey	178	65.96	.....	.....	.....	.....	.....	.....	.....	.....	75.40	.....	.....
31	Daniel Shanahan	179	.....	.....	.....	107.52	.....	.....	.....	.....	.....	.....	.....	.....
31	Wheatley Bros	180	304.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sept. 29	The Gutta Percha and Rubber Manufacturing Company	142	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	Price Manufacturing Company	145	.....	.....	.....	34.35	.....	.....	.....	.....	\$56.00	.....	.....	.....
29	Robert Leitch & Sons	149	.....	.....	\$137.27	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	Thomas Gray & Son	152	.....	.....	.....	.....	.....	.....	.....	\$11.50	.....	.....	.....	.....
29	Charles Becker	153	.....	.....	.....	53.88	.....	.....	.....	.....	.....	.....	.....	.....
28	A. O. Brummel	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	Rider & Addison	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	W. W. Tupper & Co	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	Otis Bros. & Co	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	Robert Leitch & Sons	9	.....	.....	341.27	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	J. H. Grant	183	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,500.00	.....
29	George H. Baldwin	184	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	Thomas Gray & Son	185	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.00	.....	.....
29	William H. Richards & Co	186	.....	.....	.....	.....	.....	.....	.....	.....	.....	50.00	.....	.....
29	James Quarles	187	.....	.....	.....	.....	.....	.....	.....	.....	.....	.75	.....	.....

Classified expenditures—Continued.

REPAIRS AND IMPROVEMENTS—Continued.

Date.	Furnished by—	On voucher numbered—	Lumber, doors, etc.	Hardware, etc.	Engineers and plumb- ers' supplies.	Paints, oils, glass, etc.	Roofing.	Iron work, etc.	Plastering.	Sundry small repairs, etc.	Fire and other appa- ratus.	Masons' supplies.	Buildings.	Grand total.
1888.														
Sept. 29	Harrison Pleasant	188										\$1.50		
29	The Clark Manufacturing Company	190								\$221.35				
29	Morris Tasker & Co	191			\$88.35									
29	Edward L. Dent	192						\$967.64						
29	Mobley & Scheuerman	193										6.17		
29	Robert Leitch & Sons	195			45.36						\$118.25			
29	John Miller	197										242.50		
29	Robert Leitch & Sons	198			662.29									
29	John Early & Co	206				\$31.32								
31	George Ryneal, jr	223				67.80								
31	Robert Leitch & Sons	223			710.00									
31	O. L. Wolfenstein & Co	199		\$501.18										
31	T. B. Cross, jr	200	\$165.07											
31	W. M. Whyte & Bro	201		15.00									\$1,500.00	
31	J. H. Grant	202												
31	C. Fen Keys	203								75.00				
31	Robert Leitch & Sons	204			38.88									
31	J. F. Manning	206			168.00									
17	George Mathieson	11												
31	William H. Richards & Co	12										1.00		
31	Willet & Libbey	13										53.50		
31	C. Fen Keys	14	356.55							224.17				
31	Robert Leitch & Sons	15			161.38									
20	Daniel Shanahan	254				255.42								
20	Edward L. Dent	17												
20	Daniel Shanahan	18				74.45		58.05						
28	William S. Cross	19	607.52											
30	Chas. White & Co	20						233.90						
30	A. O. Brummell	21								19.33				
30	Chas. J. Fanning	207					\$540.50							
30	Chas. White & Co	208						408.55						
30	Thos. Gray & Son	209							\$90.90					

[illegible]

Classified expenditures—Continued.

SALARIES AND WAGES.

Date.	Furnished by—	On voucher numbered—	Superintendent, physicians, and general office.	Ward service.	Inside domestic department.	Engineer's department.	Farm and garden, hauling coal, drivers, etc.	Mechanics and helpers.	Making clothing.	Laundry.	Sunday service.	Grand total.
1888.												
July 20	Ellen Bowling.....	5							\$13.50			
25	Pasquale Serpico.....	8							20.40			
25	H. M. McAndrews.....	10							11.52			
25	M. Wilkinson.....	11							18.00			
30	Jane Beavan.....	21							18.00			
31	O. A. Moore.....	22							13.50			
31	Pay-roll—support.....	36	\$1,341.47	\$2,640.20								
31	do.....	37		952.95	\$767.00							
31	do.....	38			460.84		\$1,016.00	\$601.00		\$450.80		
31	do.....	39				\$585.83	1,048.43	918.61				
31	Pay-roll—buildings and grounds.....	163						689.31				
31	do.....	168										
Aug. 3	L. M. Cross.....	43							12.00			
13	Bessie Stuart.....	51							18.00			
14	Etta Harrison.....	54							20.00			
17	O. A. Moore.....	58							9.00			
24	Lizzie Langley.....	59							13.50			
28	M. Wilkerson.....	71							13.50			
31	Jane Beavan.....	73							13.50			
31	L. M. Cross.....	75							15.71			
31	Pay-roll—support.....	91	1,405.92	2,542.75								
31	do.....	92		1,044.41	758.60							
31	do.....	93			472.40		1,016.00	390.43		431.82		
31	do.....	94				785.83	1,324.89	971.32				
31	Pay-roll—buildings and grounds.....	3						1,365.37				
31	do.....	176										
Sept. 3	Ellen Bowling.....	99							13.50			
4	K. R. Barclay.....	100							13.50			
5	H. M. McAndrews.....	101							15.36			
12	S. A. Wood.....	102							9.00			
15	Jane Jardine.....	105							9.00			
22	Maggie O'Leary.....	106							13.50			

27	Jane Beavan	111																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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Classified expenditures—Continued.
SALARIES AND WAGES—Continued.

Date.	Furnished by—	On voucher numbered—	Superintendent, physician, and general office.	Ward service.	Inside domestic department.	Farm and garden, hauling coal, drivers, etc.	Mechanics and helpers.	Making clothing.	Laundry.	Sunday service.	Grand total.
1888.											
Nov. 27	Fannie E. Bonini.....	260						\$8.50			
28	Ellen Bowling.....	261						13.50			
28	K. R. Barclay.....	263						12.75			
30	Jane Beavan.....	265						15.75			
30	M. McInturf.....	266						8.16			
30	M. A. Dodge.....	268						8.50			
30	S. A. Wood.....	269						37.33			
30	Pay-roll—support.....	292	\$1,471.15	\$2,506.49							
30	do.....	293		1,172.86	\$759.50	\$1,022.00			\$419.00		
30	do.....	294			499.97	828.43	\$827.50				
30	do.....	295					879.09				
30	Pay-roll—buildings and grounds.....	22			\$638.33		471.98				
30	do.....	211									
Dec. 3	Nellie G. Quaid.....	299						8.16			
4	Lizzie Langley.....	301						14.75			
4	F. M. Blaine.....	302						8.16			
4	L. M. Cross.....	304						17.00			
5	M. V. Powell.....	305						17.00			
7	Mrs. O. A. Moore.....	307						13.50			
8	Bessie Stuart.....	308						8.50			
15	Emma Green.....	311						8.16			
19	Eliza Goodwin.....	314						8.50			
20	Jane Beavan.....	315						10.50			
20	A. Wathen.....	316						18.00			
20	Fannie S. Tippet.....	317						9.00			
21	M. A. Dodge.....	318						8.50			
21	E. H. Stanton.....	319						8.67			
21	Belle Dodge.....	320						22.10			
21	S. M. Hardy.....	321						8.16			
21	H. M. McAndrews.....	322						11.52			
21	Etta Harrison.....	324						17.70			
22	Mary Perkins.....	325						8.50			
31	Catharine Fry.....	338						8.50			

31	M. McMahon	339	1,493.20	2,513.52																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			</
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Classified expenditures—Continued.

SALARIES AND WAGES—Continued.

Date.	Furnished by—	On voucher numbered—	Superintendent, physicians, and general office.	Ward service.	Inside domestic department.	Engineer's department.	Farm and garden, hauling coal, drivers, etc.	Mechanics and helpers.	Making clothing.	Laundry.	Sunday service.	Grand total.
1889.												
Feb. 28	Pay-roll—support.	544			\$487.36	\$733.33	\$1,307.08	\$852.23		\$431.18		
28	do	545					220.30	229.00				
28	Pay-roll—buildings and grounds	45										
Mar. 2	A. Wathen	547										
2	Ada Luckett.	548							\$8.50			
2	S. A. Wood	549							8.50			
6	Ellen Bowling	553							9.00			
12	Laura L. Dunham	555							8.84			
15	O. A. Moore.	556							12.50			
16	Emma Green.	560							15.64			
18	E. H. Stanton	564							8.50			
18	C. V. Watts	565							8.50			
20	Lizzie Langley	570							8.84			
20	Jane Beavan	572							13.50			
23	Fannie S. Tippet	576							13.50			
25	Catharine Smith	579							15.00			
25	M. McInturf	580							8.50			
26	K. R. Barclay	581							8.50			
27	Maggie O'Leary	583							8.50			
27	Catharine Krieg	584							9.00			
27	Mary Perkins	585							8.50			
28	H. M. McAndrews	589							8.50			
29	L. M. Cross	590							13.44			
30	S. A. Wood	592							34.68			
30	Pay-roll—support.	643							28.50			
30	do	672	\$1 453.70	\$2,549.18	767.00							
30	do	673		1,218.85	507.00							
30	do	674					1,269.00			422.82		
30	do	675				573.34	294.25	1,023.56				
30	Pay-roll—buildings and grounds	49						274.05				
30	do	221						206.43				
April 4	Etta Harrison	677							15.13			
13	Ellen Bowling	680							13.50			

[illegible]

Itemized receipts.

1888.	
July	2. Cash received for board of S. C. Borrows..... \$130.00
	2. Cash received for board and special attendance on Edw. Burchell..... 211.00
	2. Cash received for board of E. A. Bradley..... 20.00
	2. Cash received for board of Christian Potter..... 65.00
	6. Cash received for board of U. S. Home patients..... 920.00
	6. Cash received for board of S. R. Cox..... 65.00
	6. Cash received for board of Jennie M. Lowell..... 91.00
	9. Cash received for board of W. H. Zepp..... 182.00
	10. Cash received for board of M. A. Gilleland..... 65.00
	11. Cash received special attendance on Rollin Perkins..... 75.00
	11. Cash received for board of Martha Herman..... 20.00
	16. Cash received for board of John T. Moncrief..... 65.00
	17. Cash received for board of C. K. Yancey..... 91.00
	20. Cash received for board of Bryan Hall..... 65.00
	20. Cash received for board of Herman Buchlers..... 130.00
	21. Cash received for board of Marine Hospital Service..... 946.29
	24. Cash received for board of M. E. Wadsworth..... 28.00
	24. Cash received for board of John Weidman..... 91.00
	31. Cash received for board of Chu-e-rah-rah-he-kah..... 91.00
	31. Cash received for sale of stock, etc..... 67.84
Aug.	2. Cash received for board of E. A. Bradley..... 20.00
	2. Cash received for board of A. Woodward..... 50.00
	3. Cash received for board of Emily B. Wadsworth..... 28.00
	4. Cash received for board of Julius Solger..... 20.00
	15. Cash received for board of I. A. Van Brunt..... 20.00
	15. Cash received for board of S. H. Johnson..... 7.00
	20. Cash received for board of John C. Rives..... 30.00
	27. Cash received for board of M. Herman..... 20.00
	28. Cash received for board of E. A. Bradley..... 20.00
	31. Cash received for sale of stock, etc.,..... 77.65
Sept.	3. Cash received for board of F. W. Yager..... 91.00
	6. Cash received for board of William H. Hindes..... 65.00
	15. Cash received for board of William H. Hindes..... 65.00
	19. Cash received for board of John C. Rives..... 30.00
	22. Cash received for board of Martha Herman..... 20.00
	25. Cash received for board of E. A. Bradley..... 20.00
	28. Cash received for board of E. B. Wadsworth..... 28.00
	28. Cash received for board of Adolph Berger..... 130.00
	28. Cash received for board of Jennie M. Lowell..... 91.00
	29. Cash received for board and special attendance on Edw. Burchell..... 211.00
	29. Cash received for board of Lucy B. Newell..... 31.00
	29. Cash received for board of S. R. Cox..... 65.00
	29. Cash received for sale of stock, etc..... 85.10
Oct.	1. Cash received for board of S. C. Borrows..... 130.00
	6. Cash received for board of Soldiers' Home patients..... 907.86
	6. Cash received for board of M. A. Gilleland..... 65.00
	6. Cash received for board and special attendance on Rollin Perkins..... 75.00
	6. Cash received for board of Bryan Hall..... 65.00
	6. Cash received for board of H. Buchlers..... 130.00
	10. Cash received for board of Amon Woodward..... 20.00
	12. Cash received for board of Warren Webster..... 364.00
	12. Cash received for board of Christian Potter..... 65.00
	12. Cash received for board of M. E. Cazenove..... 156.00
	12. Cash received for board of Marine Hospital Service..... 969.43
	12. Cash received for board of Martha Herman..... 20.00
	16. Cash received for board of C. K. Yancey..... 91.00
	20. Cash received for board of E. B. Wadsworth..... 28.00
	23. Cash received for board of E. A. Bradley..... 20.00
	23. Cash received for board of John Weidman..... 91.00
	25. Cash received for board of J. C. Rives..... 30.00
	25. Cash received for board of J. T. Moncrief..... 3.57
	31. Cash received for board of Frank B. Hayes..... 65.00
	31. Cash received for sale of stock, etc..... 26.60
Nov.	9. Cash received for board of Amon Woodward..... 20.00
	18. Cash received for board of Martha Herman..... 20.00
	22. Cash received for board of Emily B. Wadsworth..... 28.00
	22. Cash received for board of E. A. Bradley..... 20.00
	27. Cash received for board of Chu-e-rah-rah-he-kah..... 91.00

1888.	
Nov. 30.	Cash received for sale of stock, etc..... \$350.36
Dec. 6.	Cash received for board of William H. Hindes 65.00
7.	Cash received for board of Amon Woodward..... 32.00
8.	Cash received for board of Elizabeth Howell..... 28.57
19.	Cash received for board of M. E. Bradley..... 20.00
29.	Cash received for board of Emily B. Wadsworth..... 28.00
29.	Cash received for board of Jennie M. Lowell..... 91.00
29.	Cash received for board of Adolph Berger..... 65.00
31.	Cash received for board and special attendance on Edw. Burchell 211.00
31.	Cash received for board of Martha Herman..... 20.00
31.	Cash received for board of Sarah Cox..... 65.00
31.	Cash received for board of W. H. Zepp..... 273.00
31.	Cash received for board of M. A. Gilleland..... 65.00
31.	Cash received for board of Soldiers' home patients..... 829.29
31.	Cash received for special attendance on Rollin Perkins..... 75.00
31.	Cash received for board of H. Beuchlers..... 130.00
31.	Cash received for board of Marine Hospital Service..... 12.50
31.	Cash received for board of M. E. Cazenove..... 156.00
31.	Cash received for board of Christian Potter..... 65.00
31.	Cash received for sale of stock, etc..... 103.72
1889.	
Jany. 9.	Cash received for board of Bryan Hall..... 65.00
15.	Cash received for board of Marine Hospital Service..... 2.00
18.	Cash received for board of S. C. Borrows..... 130.00
21.	Cash received for board of C. K. Yancey..... 91.00
21.	Cash received for board of Emily B. Wadsworth..... 28.00
25.	Cash received for board of Marine Hospital Service..... 974.57
28.	Cash received for board of John Weidman..... 91.00
31.	Cash received for board of Martha Herman..... 20.00
31.	Cash received for sale of stock, etc..... 122.26
Feb'y. 4.	Cash received for board of Amon Woodward..... 20.00
9.	Cash received for board of Chu-e-rah-rah-he-kah..... 91.00
21.	Cash received for board of E. A. Bradley..... 30.00
22.	Cash received for board of Martha Herman..... 20.00
28.	Cash received for board of Emily B. Wadsworth..... 28.00
28.	Cash received for sale of stock, etc..... 168.14
March 7.	Cash received for board of W. H. Hindes..... 65.00
9.	Cash received for board of Annie Young..... 14.28
11.	Cash received for board of Amon Woodward..... 20.00
20.	Cash received for board of Esau Gresham..... 390.00
23.	Cash received for board of Emily B. Wadsworth..... 28.00
23.	Cash received for board of Jennie M. Lowell..... 91.00
25.	Cash received for board of Martha Herman..... 20.00
26.	Cash received for board of E. A. Bradley..... 30.00
30.	Cash received for board and special attendance on Edw. Burchell. 211.00
30.	Cash received for board of Adolph Berger..... 65.00
30.	Cash received for board of Sarah R. Cox..... 65.00
30.	Cash received for board of Elizabeth Howell..... 65.00
30.	Cash received for board of Amon Woodward..... 25.00
30.	Cash received for board of Soldiers' Home patients..... 771.43
30.	Cash received for board of M. A. Gilleland..... 65.00
30.	Cash received for board of Elizabeth Howell..... 1.43
30.	Cash received for board of M. E. Cazenove..... 156.00
30.	Cash received for board and special attendance on Rollin Perkins 75.00
30.	Cash received for board of Marine Hospital Service..... 897.43
30.	Cash received for board of Herman Buchlers..... 130.00
30.	Cash received for board of Bryan Hall..... 65.00
30.	Cash received for sale of stock, etc..... 193.53
April 13.	Cash received for board of W. H. Zepp..... 91.00
16.	Cash received for board of Christian Potter..... 65.00
17.	Cash received for board of Ida Van Brunt..... 20.00
19.	Cash received for board of S. C. Borrows..... 130.00
19.	Cash received for board of John Weidman..... 91.00
22.	Cash received for board of C. K. Yancey..... 91.00
22.	Cash received for board of Emily B. Wadsworth..... 28.00
27.	Cash received for board of Chu-e-rah-rah-he-kah..... 91.00
27.	Cash received for board of Martha Herman..... 20.00
30.	Cash received for sale of stock, etc..... 324.27
May 6.	Cash received for board of Amon Woodward..... 20.00

1889.			
May	23.	Cash received for board of F. W. Yager.....	\$155. 00
	24.	Cash received for board of E. A. Bradley.....	50. 00
	25.	Cash received for board of Emily B. Wadsworth.....	28. 00
	26.	Cash received for board of Martha Herman.....	20. 00
	28.	Cash received for board of M. E. Cazenove.....	156. 00
	31.	Cash received for board of William H. Hindes.....	65. 00
	31.	Cash received for sale of stock, etc.....	238. 39
June	8.	Cash received for board of Amon Woodward.....	20. 00
	12.	Cash received for board of Emily B. Wadsworth.....	28. 00
	15.	Cash received for board of J. M. Lowell.....	91. 00
	15.	Cash received for board of Martha Herman.....	28. 00
	29.	Cash received for board and special attendance on Edw. Burchell.....	211. 00
	29.	Cash received for board of Lucy B. Newell.....	160. 00
	29.	Cash received for board of M. A. Gilleland.....	65. 00
	29.	Cash received for board of Christian Potter.....	65. 00
	29.	Cash received for board of Amon Woodward.....	75. 00
	29.	Cash received for board and special attendance on Rollin Perkins.....	75. 00
	29.	Cash received for board and special attendance on G. Rockwood.....	10. 00
	29.	Cash received for board of Bryan Hall.....	65. 00
	29.	Cash received for board of Herman Buchlers.....	130. 00
	29.	Cash received for board of Sarah R. Cox.....	65. 00
	29.	Cash received for board of United States Soldiers' Home patients.....	776. 43
	29.	Cash received for board of W. H. Zepp.....	91. 00
	29.	Cash received for board of Emily B. Wadsworth.....	28. 00
	29.	Cash received for board of William Griffiths.....	455. 00
	29.	Cash received for board of C. K. Yancey.....	91. 00
	29.	Cash received for board of S. C. Borrows.....	130. 00
	29.	Cash received for board of Marine Hospital service.....	1,001. 56
	29.	Cash received for sale of stock, etc.....	575. 40
	29.	Cash received for board of Frank B. Hayes.....	130. 00
	29.	Cash received for board of J. V. Lewis.....	65. 00
	29.	Cash received for board of D. L. Kraft.....	96. 00
Total			22,366. 90

REPORT

OF THE

FREEDMEN'S HOSPITAL.

FREEDMEN'S HOSPITAL,
Washington, D. C. July 20, 1889.

SIR: I respectfully submit the annual report of this hospital for the fiscal year ending June 30, 1889.

During the year there were admitted and treated in the hospital 2,279 patients.

In the dispensary attached 2,317 were treated.

That some idea may be formed as to the character of our work, I will mention that during the year 261 surgical operations were performed; with few exceptions these operations were attended with success. The principal operations were: amputation of leg, 2; amputation of arm, 1; amputation of fingers, 14; excision of cancer of breast, 1; of carcinoma of eye, 2; of fatty tumors of leg, 3; of fibroid tumors of uterus, 2; paracentesis abdominis, 1; phimosis, 20; stricture of urethra, 12; stricture of rectum, 1; hydrocele, 2; fistula in ano, 3; abscesses, 43; reduction of dislocation of hip, 1; of dislocation of shoulder, 1; of compound dislocation of tarsal bones, 1; of dislocation of fingers, 3; setting of fracture of nasal bones, 1; of fracture of inferior maxillary, 5; of humerus, 5; of clavicle, 2; of fracture of radius and ulna, 7; of femur, 6; of tibia and fibula, 4; of tibia, 1; of compound fracture of tibia and fibula, 1; of rib, 1; gunshot wounds, 23; incised wounds, 37; lacerated wounds, 28; contused wounds, 21; punctured wounds, 6.

I have arranged a series of tables, marked A, B, C, D, E, F, G, and H, which contain a clear and concise statement of all that has been done during the year. The tables A and B show the causes of death and the number of deaths occurring within ten days after admission. I consider these important, as they show the condition of the patients at the time of admission. The table marked C gives a full list of the injuries, surgical cases, and diseases. The table D shows the occupation of the patients. The table E gives their nativity. The table F gives the monthly admissions, and the one marked G shows the number admitted each year for the past fifteen years; from this table the growth of the hospital can be ascertained. The last table, H, shows the number admitted, born, discharged, and died during the year, and the number remaining June 30, 1889.

The rules for the admission of patients are simple, and attended with the least possible formality, the management merely requiring that the person applying needs surgical or medical treatment and the assurance that they are without means of support. Incurables who should be sent to the poor asylum are not admitted. An exception is made when

the applicant has come from a distance, and it would be inhuman to turn him away. Such a person is provided for temporarily until some provision can be made for him.

This class, as a rule, is confined to some poor, broken-down ex-slave, who has been sent from his home and former place of service in Maryland or Virginia. About 50 per cent. of the admissions are upon the recommendation of the Police Department; the remainder are recommended by the physicians of the city and from the States and by the Associated Charities and other charitable enterprises. Many apply directly to the hospital. All cases are inspected by the medical officer on duty.

Upon the recommendation of the Commissioner of Pensions 97 ex-soldiers were admitted and treated. These persons come to the capital in search of pensions. Most of them are sick and poor, and the hospital is a blessing to them.

During the year, upon the recommendation of the Board of Managers of the National Soldiers' Homes, 28 ex-soldiers, who were delayed in the city a few days waiting transportation, were received. For these cases a small compensation is paid by the board, sufficient to meet the cost of keeping them. The amount for last year was \$46.

In my report of last year I called attention to the large number of deaths that had occurred during the year; to the table marked B, I made special reference, as it showed that fully one-third of the deaths occurred within ten days after admission. From this it will be perceived that a large percentage of the cases admitted were hopelessly ill prior to coming to the hospital. I again invite attention to this part of my report, for it is important that this community should be in possession of the cause of this large mortality among its poor, especially among the colored, who constitute the major portion of the indigent class, and against whom the hasty opinion has been formed that they are lacking in constitutional stamina.

My years of hospital practice and experience among them shows this opinion to be irrational and preconceived. They are simply the victims of their environments, which as a rule are bad.

As I said in my report of a year ago, these people are compelled to live in the most unhealthy portions of the city, generally in alleys, that are unsuited for any human being to live in. Owing to the usurious rate of rent exacted of them, they are compelled to crowd together in small apartments; their food, clothing, and bedding are of the poorest kind. These alleys are filthy; many of them are not sewered. Owing to a strong, unreasonable, and unchristian prejudice, these people can not obtain comfortable homes upon paved streets. Not until there is a thorough and complete change in the laws regulating the erection of tenement houses will this mortality be lessened.

During the year 90 cases of alcoholism, including delirium tremens, have been treated. Though the majority of these cases were of a serious nature, there was only one death. The physician in charge of these cases has treated them without resorting to the pernicious practice of administering stimulants.

As the question of establishing an inebriate asylum is being seriously discussed in this community, it may not be inappropriate for me to re-iterate the opinions I expressed in two previous reports upon this subject. My experience among this class has not been such as to lead me to look with favor upon the erection of an asylum. I consider inebriety to be a crime, and as such should be punished. An asylum may be a good institution for those who desire to reform, and who seek to be

strengthened by being surrounded by healthy influences. The number in this community who so desire is very limited—I have not been brought in contact with them. Those who have come under my notice and care during the past decade are not all from the lowest elements of society. Many of them are men of education. I can not call to mind a case where the patient desired to reform. As with most persons when very sick, they are very penitent and prayerful, which disappears with returning health. I hold, when a person has been admitted to a hospital and treated for alcoholism and has been thoroughly sobered and kept so for one or two months, that that person can remain so if he or she possesses the will or the desire.

In this connection I desire to call your attention to a matter which, while it may not be exactly germane to a report of this kind, is of so much importance that I feel constrained to invite your attention to it. I refer to the numerous drinking brothels and gambling dens that have recently been established near this hospital. These new institutions are the outgrowth of a tricky law, passed by Congress about eighteen months ago, forbidding pool-selling in the cities of Washington and Georgetown. I wrote an earnest letter to the President, urging him to veto the bill, as it was a mere subterfuge, and sought to legalize the worse form of gambling, by dumping the dens of the two cities upon the county only a few squares from their former abodes, and at the terminus of the two leading street railroads.

I argued that the law should apply to the District of Columbia, and should not be confined to the cities above mentioned. I am sorry to say my protest and appeal did not accomplish anything.

I frequently urged upon the Commissioners of the District prior to their retirement the importance of not granting liquor licenses to those seeking to establish saloons in the vicinity of the hospital. The inhabitants of this section of the city are poor people, and should be protected in this respect. I regret to add my efforts in this direction were of no avail. During the year 115 patients were treated for gunshot, incised, punctured, and contused wounds, all the result of personal encounters. Of this number one died from the injuries received. A careful inquiry developed the fact that the person assailed or the one making the assault was under the influence of liquor at the time.

Through the generosity of Congress I succeeded in securing appropriations for several needed improvements, among which was the paving of Pomeroy street with asphalt. For years this street has been in a very bad condition. An appropriation was also made for the erection of a new stable and dead-house; these buildings are much needed, and the work will commence at once. New bedsteads were purchased for three of the main wards. The hospital buildings have been thoroughly renovated and painted. I can safely say that the hospital is in excellent sanitary condition.

The custom of keeping up religious services upon the Sabbath and during the week has been continued. These services are conducted by two theological students of Howard University, who receive their board for their services. The hospital is visited regularly by Rev. Fathers Richard Burke and George Glaab, and occasionally by other clergymen.

These gentlemen do good work among the sick.

Mrs. Ada E. Spurgeon continues her valuable missionary labors among the inmates.

The rule requiring those who are able to perform some light work is still enforced. The following articles have been made by those wait-

ing to be confined and convalescents: Bed-sacks, 22; pillow-cases, 102; sheets, 86; towels, 92; shirts, 6; drawers, 10; chemises, 55; dresses, 55; aprons, 115; handkerchiefs, 13; skirts, 20; caps, 3; trousers, 2; nightgowns, 70; curtains, 6; pillow-ticks, 45.

Medical students from Howard University Medical College avail themselves of the valuable opportunities offered them for clinical study.

I have always allowed these students every possible advantage, as it is the only place where they can obtain any practical information.

I find it important to have a small building, of four rooms at least, erected for the accommodation of those who are so unfortunate as to be afflicted with some contagious disease, as measles, scarlet fever, or diphtheria. I am applied to by the police to take such cases occasionally. We have managed to take some, but it is always attended with too much risk; they should be isolated. I shall include in the estimates for the next fiscal year an amount sufficient to erect such a structure.

Very respectfully,

C. B. PURVIS, M. D.,
Surgeon-in-Chief.

Hon. JOHN W. NOBLE,
Secretary of the Interior, Washington, D. C.

TABLE A.—*Causes of death.*

Disease, etc.	White.		Colored.		Total.	Disease, etc.	White.		Colored.		Total.
	M.	F.	M.	F.			M.	F.	M.	F.	
Phthisis pulmonalis	5	1	41	29	76	Stricture and fistula of urethra, septicæmia			1		1
Hæmoptysis				1	1	Fistula of urethra, fistula in ano, pyæmia			2		2
Laryngeal phthisis				1	1	Chronic stricture and ulceration of rectum	1				1
Typhoid fever	1		6	5	12	Ulceration of rectum, fistula in ano (syphilitic) ..			1		1
Valvular disease of heart ..			12	7	19	Pyæmia (syphilitic)			1		1
Cardiac dropsy			4	5	9	Aneurism of abdominal aorta			1		1
Apoplexy	2		5	2	9	Convulsions			4		4
Senile debility	2		5	4	11	Epileptic convulsions			2		2
Acute diarrhœa			1		1	Fibro-cystic tumor				1	1
Chronic diarrhœa	2		3	2	7	Crushed by falling rock, internal hemorrhage			1		1
Bright's disease			4	2	6	Enlargement of liver and ascites	1				1
Congenital debility		1	3	4	8	Perityphlitis				1	1
Pneumonia	1		6		7	Chronic gastritis			1		1
Typhoid pneumonia				1	1	Ulceration of bowels			1		1
Congestion of lungs			4		4	Obstruction of bowels				1	1
Cancer of tongue			1		1	Chronic cystitis, septicæmia			1		1
Cancer of breast				1	1	Alcoholism		1			1
Cancer of uterus				1	1	Heart clot (confinement) ..				1	1
General paralysis			3		3	Confinement, exhaustion ..		1			1
Typho-malarial fever			1		1	Premature birth				2	2
General tuberculosis	2		4	2	8	Overlaid				1	1
Peritonitis			1	2	3	Trismus nascentium				1	1
Congestion of brain			2		2	Pertussis				1	1
Softening of brain			3		3	Metritis				1	1
Cerebro-spinal meningitis ..			3		3	Uræmic convulsions				1	1
Paraplegia	1		1		2	Puerperal mania				1	1
Abscess of brain			1		1	Puerperal metritis				1	1
Marasmus			2		2	Puerperal peritonitis				1	1
Burns				2	2	Enteritis		1			1
Gunshot wound of right lung and pericardium			1		1	Dysentery	1	1			2
Hemorrhage from bowels				1	1	Carbuncle				1	1
Fracture of femur, senile debility			1		1						
Necrosis of superior maxillary, senile debility			1		1	Total	20	6	135	92	253
Necrosis of pelvis				1	1						
Necrosis of tibia				1	1						
Necrosis of hip-joint				1	1						
Gangrene of both legs				2	2						
Hemiplegia from dynamite explosion, apoplexy	1				1						

TABLE B.—*Number of deaths occurring within ten days after admission, and the time each case was in the hospital prior to death.*

1 died in 20 minutes after admission.
 1 died in $\frac{1}{2}$ hour after admission.
 1 died in 1 hour after admission.
 1 died in 2 hours after admission.
 1 died in 4 hours after admission.
 1 died in 5 hours after admission.
 2 died in 6 hours after admission.
 1 died in 12 hours after admission.
 1 died in 13 hours after admission.
 2 died in 14 hours after admission.
 2 died in 24 hours after admission.
 3 died in 30 hours after admission.
 3 died in 36 hours after admission.
 2 died in 40 hours after admission.

8 died in 2 days after admission.
 2 died in $2\frac{1}{2}$ days after admission.
 6 died in 3 days after admission.
 1 died in $3\frac{1}{2}$ days after admission.
 9 died in 4 days after admission.
 10 died in 5 days after admission.
 7 died in 6 days after admission.
 7 died in 7 days after admission.
 8 died in 8 days after admission.
 5 died in 9 days after admission.
 7 died in 10 days after admission.
 Total, 92; over one-third of all the deaths occurring during the year.

TABLE C.—*The diseases and conditions for which patients were admitted to hospital and treated in dispensary.*

Disease, etc.	Treated in hospital.				Treated in dispensary.	Disease, etc.	Treated in hospital.				Treated in dispensary.
	White.		Colored.				White.		Colored.		
	M.	F.	M.	F.			M.	F.	M.	F.	
Fracture of nasal bones...	...	...	...	...	1	Necrosis of metacarpal bones...	...	...	1	2	...
Compound fracture of malar bone...	...	...	1	...	...	Necrosis of pelvis...	...	...	1	...	...
Fracture of inferior maxillary...	1	...	3	1	...	Necrosis of tibia...	...	...	1	...	1
Fracture of humerus...	1	...	2	...	2	Necrosis of tibia and fibula...	...	...	1	...	...
Fracture of clavicle...	...	...	1	...	2	Necrosis of ankle-joint...	...	...	1	...	...
Fracture of radius and ulna...	...	...	...	...	7	Necrosis of metatarsal bones...	1	...	...	...	...
Fracture of femur...	...	...	5	...	1	Necrosis...	...	...	...	...	6
Fracture of tibia...	1	...	...	...	...	Amputation of fingers...	...	...	4	1	5
Fracture of tibia and fibula...	1	...	3	...	...	Exostosis...	1	...	...	1	...
Compound fracture of tibia and fibula...	...	...	1	...	...	Senile gangrene...	...	...	2	...	...
Fracture of rib...	...	...	2	...	1	Gangrene of hand...	...	...	1	...	...
Dislocation of hip...	...	...	1	...	...	Gangrene of both legs...	...	...	...	2	...
Dislocation of shoulder...	...	...	1	...	...	Psoas abscess...	...	...	1	...	...
Compound dislocation of tarsal bones...	...	...	1	...	...	Ulcers...	4	2	...	5	10
Dislocations...	...	...	...	...	3	Chronic ulcers...	9	1	7	9	15
Gunshot wounds...	3	...	10	...	10	Varicose veins...	1	...	...	...	...
Incised wounds...	4	...	13	...	20	Abscesses...	2	3	12	6	20
Lacerated wounds...	...	...	3	...	25	Abscess of shoulder joint...	...	...	...	...	3
Contused wounds...	2	1	7	1	10	Burns...	...	...	2	2	5
Punctured wounds...	...	...	5	1	...	Bursæ...	...	...	...	...	3
Contusions...	16	...	16	3	25	Fibroid tumors...	...	...	2	...	...
Sprains...	3	...	3	2	3	Keloid tumors...	...	...	1	...	2
Coxalgia...	...	...	1	1	...	Fatty tumors...	1	...	1	1	6
Synovitis...	1	...	3	3	3	Cancer of face...	...	...	...	...	2
Inflammation of wrist-joint...	...	...	2	...	...	Cancer of finger...	...	...	1	...	...
Periostitis...	...	1	1	2	...	Cancer of stomach...	...	...	...	1	...
Anchylosis...	...	...	1	1	5	Cancer of uterus...	...	1	...	2	...
Paronychia...	1	...	1	...	6	Foreign body in hand...	...	...	...	...	7
Ingrowing toe-nails...	...	...	...	...	2	Foreign body in foot...	...	...	...	...	3
Carbuncle...	...	...	2	1	...	Foreign body in eye...	...	...	...	...	3
Furunculus...	...	...	...	1	2	Foreign body in throat...	...	...	...	1	...
Frost-bite...	...	...	4	...	5	Hernia, inguinal...	...	...	7	...	2
Dog-bite...	...	...	1	1	6	Hernia, strangulated inguinal...	...	...	1	...	1
Cat-bite...	...	...	...	...	1	Aneurism of thoracic aorta...	1	...	1	...	...
Caries of shoulder...	...	...	1	...	...	Aneurism of abdominal aorta...	...	...	1	...	...
Caries of sternum...	...	1	2	...	...	Aneurism...	...	...	...	...	2
Caries of phalanges...	...	...	...	...	2	Epistaxis...	...	...	2	...	6
Caries of metacarpal bones...	...	...	1	...	...	Syphilis...	10	4	26	30	69
Caries of hip...	1	...	...	...	...	Syphilis, secondary...	5	...	9	8	27
Caries of tibia...	...	...	3	...	...	Syphilis, tertiary...	...	2	2	1	6
Caries of ankle-joint...	...	...	...	...	2	Syphilitic condylomata...	...	...	2	3	2
Caries of tarsal bones...	1	...	...	...	...	Syphilitic periostitis...	...	...	...	1	...
Necrosis of superior maxillary...	...	...	1	...	...	Rupia syphilitica...	...	...	2	2	...
Necrosis of inferior maxillary...	...	...	...	...	1	Syphilitic ulcers...	1	...	...	...	...
						Gonorrhœa...	5	2	22	1	72
						Bubo...	4	1	22	2	37
						Phagedenic bubo...	...	...	1	...	...
						Orchitis...	4	...	8	...	12

TABLE C.—The diseases and conditions for which patients were admitted, etc.—Continued.

Disease, etc.	Treated in hospital.				Treated in dispensary.	Disease, etc.	Treated in hospital.				Treated in dispensary.
	White.		Colored.				White.		Colored.		
	M.	F.	M.	F.			M.	F.	M.	F.	
Phimosis	2		11		7	Rubeola	1				
Paraphimosis			3		6	Scarlatina			1		5
Gangrene of scrotum			1			Varicella					5
Abscess of scrotum			1			Anæmia					3
Stricture of urethra	5		2		7	Pyæmia	1		3	1	
Fistula of urethra	1		2		5	Septicæmia		1	1		
Fistula of urethra and scrotum			1			Purpura hæmorrhagica				1	
Dysuria	4				3	Acute bronchitis	9		15	6	367
Incontinence	1		1	2		Chronic bronchitis	3		4		10
Retention	2		2			Capillary bronchitis			2		10
Rupture of bladder			1			Nasal catarrh					10
Acute nephritis			2	4		Tonsillitis			4	4	55
Hypertrophy of prostate			1			Ulcerated sore throat					5
Hydrocele					2	Diphtheria		1			
Cystitis	1	1	4	9	15	Croup					1
Prolapsus ani	1					Asthma	2	1	6	1	25
Fissure of anus					2	Pertussis			2	1	5
Fistula in ano	3	1	3	2	3	Pleurisy	2		8	7	67
Stricture of rectum				2	2	Phthisis pulmonalis	17	6	69	55	45
Ulceration of rectum	1		1	1	3	Hemoptysis	3		5	6	15
Hæmorrhoids	4		3	2	15	Laryngeal phthisis				1	
Diabetes mellitus	1					Congestion of lungs			4		2
Bright's disease	2		4	3	2	Pneumonia	3		22	4	10
Ascites	1		1		1	Pleuro-pneumonia				2	
General dropsy	2		3	1		Typhoid pneumonia				2	
Acute rheumatism	5	6	33	30	110	Gangrene of lungs					5
Chronic rheumatism	11	1	32	2	7	Acute laryngitis					20
Lumbago	4		2	1	23	General tuberculosis	1		2	2	5
Sciatica			1			Asphyxiated by gas			1		
Myalgia	2		1	1		Valvular disease of heart	6		24	15	15
Neuralgia		1	2	5	28	Cardiac dropsy			3	2	10
Pleurodynia				1		Hypertrophy of heart	1		11	1	5
Torticollis					5	Functional disorder of heart			2		15
Alcoholism	63	8	5	4	5	Pericarditis					5
Delirium tremens	7	1	2			Endocarditis				2	
Amaurosis	1		2	1		Aphthæ	1				5
Cataract	2					Stomatitis				1	5
Conjunctivitis	1	1		1	25	Pharyngitis					35
Ophthalmia tarsi			1			Enlarged uvula					3
Ophthalmia gonorrhœal			1			Parotitis	1		1	1	10
Iritis			1			Gastralgia	1				5
Iritis, syphilitic			2	1	1	Gastritis		2	2	3	10
Carcinoma of eye			2			Dyspepsia	1	2		1	45
Keratitis			2		2	Constipation			2	3	73
Rupture of iris			1			Ulceration of bowels				1	
Ulcer of cornea			2		2	Enteritis	2	1		2	15
Staphyloma			1			Gastro-enteritis				6	5
Pterygium					3	Entero-peritonitis				1	
Tinea					3	Perityphlitis				1	
Tinea capitis					5	Dysentery	1	5	4	4	20
Scabies	2				5	Marasmus			2		
Acne					10	Cholera morbus			1		2
Herpes zoster					5	Colic	1		5	1	15
Eczema			1		17	Acute diarrhœa	13	2	8	6	30
Rupia					2	Chronic diarrhœa	4	2	5	2	15
Lupus			1	1		Congestion of liver		1		3	
Elephantiasis			2			Hypertrophy of liver	1		4		
Enlarged glands			2		5	Jaundice				1	
Scrofula	1		6	3	42	Hypertrophy of spleen			1		
Deafness	1					Peritonitis		1	1	11	5
Otorrhœa					5	Tubercular peritonitis			1		
Otitis					2	Hysteria		1		6	15
Odontalgia				1		Insomnia	1				5
Intermittent fever, quotidian	8	1	6	1	20	Hemicrania				2	
Intermittent fever, tertian	7	2	10	9	25	Cephalalgia	3		5	4	77
Typhoid fever	3	2	28	11	10	Morphine habit	1				
Typho-malarial fever			2	1	1	Dementia	1		2	6	
Malarial fever	6	1	26	7	55	Insanity	2	1	5	4	
Congestive chill					5	Convulsions			9	1	5
Erysipelas	1		5	6	10	Cerebro-spinal meningitis			7	3	
Erysipelas, phlegmonous			3		1	Vertigo					15
						Epileptic convulsions				4	
						Epilepsy	2		6	2	2

TABLE C.—*The diseases and conditions for which patients were admitted, etc.—Continued.*

Disease, etc.	Treated in hospital.				Treated in dispensary.	Disease, etc.	Treated in hospital.				Treated in dispensary.
	White.		Colored.				White.		Colored.		
	M.	F.	M.	F.			M.	F.	M.	F.	
Hystero-epilepsy		1		7	1	Endometritis		1		6	1
Chorea					1	Endocervicitis		1		1	1
Paralysis, general	3		5	2		Congestion of ovary				1	
Hemiplegia	1		6	3	2	Abscess of vulva				2	
Paraplegia	3					Œdema of vulva				1	
Congestion of brain			1			Ulceration of os uteri				1	
Concussion of brain			4		1	Fibroid tumor of uterus				1	
Softening of brain			8			Prolapsis uteri				4	2
Abscess of brain			1			Retroversion of uterus				1	
Cerebral anæmia			1			Ovaritis				1	5
Embolism				1		Retained placenta				3	
Apoplexy	2		5	2		Vaginitis				1	3
Locomotor ataxia	3					Pelvic cellulitis				9	10
Tetanus			1			Mammitis				1	5
Sunstroke	2		2			Amenorrhœa				3	10
Poison, opium					2	Dysmenorrhœa				1	10
Poison, creosote					1	Menorrhagia		1		5	10
Poison, poison oak	1					Metrorrhagia					5
Pregnancy		10		185	53	Menopause					1
Premature birth		1		3		Leucorrhœa		2		1	15
Miscarriage		3		15		Infancy	4	3	89	65	
Abortion		1		7	1	Congenital debility		1	3	5	10
Threatened abortion				2	2	Overlaid				1	
Confinement		1		4		Cholera infantum				1	6
Puerperal eclampsia				9		Trismus nascentium				1	1
Puerperal mania				1		Ascaris lumbricoides					10
Puerperal amaurosis				1		Dentition					10
Uræmic convulsions				1		Senile debility	9	1	17	7	
Metritis		2		7	16	Crippled	1		1		
Puerperal metritis				2		Convalescent	85	1	3		
Cellulitis		1				Teeth extracted					240

TABLE D.—*Occupation of patients.*

Occupation.	No.	Occupation.	No.	Occupation.	No.
Servant	458	Janitor	3	Ship-builder	1
Laborer	328	Miner	3	Well-digger	1
Ex-soldier	140	Chair-caner	3	Candle-maker	1
Driver	67	Lawyer	3	Newsboy	1
Cook	56	Cooper	3	Gilder	1
Waiter	42	Merchant	3	Contractor	1
Washerwoman	26	Watchman	3	Paver	1
Sailor	22	School-teacher	3	Auctioneer	1
Hostler	22	Upholsterer	3	Mason	1
Farmer	22	Agent	3	Messenger	1
Carpenter	17	Beer-bottler	2	Salesman	1
Housekeeper	15	Cigar-maker	2	Solicitor	1
Painter	14	Oyster-shucker	2	Cabinet-maker	1
Barber	13	Horse-shoer	2	Valet	1
Clerk	12	Fisherman	2	Photographer	1
Plasterer	9	Stone-mason	2	Mower	1
Seamstress	8	Molder	2	Shoeblick	1
Porter	8	Oyster-dredger	2	Minister	1
Tailor	8	Bar-tender	2	Fruit dealer	1
Shoemaker	8	Engineer	2	Electrician	1
Blacksmith	7	Harness-maker	2	Machinist	1
Student	6	Tinner	2	Fish-dealer	1
Hod-carrier	6	Wheelwright	2	Oysterman	1
Bricklayer	6	Jockey	2	Reporter	1
Ex-U. S. Navy	5	Actor	1	Butler	1
Brick-maker	5	Fireman	1	Tanner	1
Plumber	5	Book-keeper	1	Sail-maker	1
Butcher	5	Bell-boy	1	Wagon-maker	1
Peddler	5	Iron-worker	1	Candy-maker	1
Printer	5	Weaver	1	Pedestrian	1
Huckster	5	Stevedore	1	Brewer	1
Gardener	4	Draughtsman	1	Paper-maker	1
Wood-sawyer	4	Musician	1	Veneer-maker	1
Stone-cutter	4	Locksmith	1	Stage-band	1
Junk-dealer	4	Dairyman	1	No occupation	68
Boatman	4	Florist	1	Unknown	362
Nurse	3	Electro-plater	1		

TABLE E.—*Nativity of patients.*

Where born.	No.	Where born.	No.	Where born.	No.
Virginia.....	655	Alabama.....	6	Australia.....	2
District of Columbia.....	464	Italy.....	5	Michigan.....	2
Maryland.....	407	Scotland.....	5	Delaware.....	2
Ireland.....	97	Wales.....	5	New Hampshire.....	2
New York.....	56	Louisiana.....	5	Iowa.....	2
Pennsylvania.....	44	Canada.....	4	Bavaria.....	1
Germany.....	41	Maine.....	4	Portugal.....	1
North Carolina.....	32	Connecticut.....	4	Norway.....	1
Massachusetts.....	16	Rhode Island.....	4	Sweden.....	1
New Jersey.....	16	Missouri.....	4	Denmark.....	1
England.....	14	Switzerland.....	3	France.....	1
South Carolina.....	13	West Indies.....	3	Holland.....	1
Ohio.....	10	Illinois.....	3	Newfoundland.....	1
West Virginia.....	10	Florida.....	3	Colorado.....	1
Tennessee.....	9	Texas.....	3	New Mexico.....	1
Georgia.....	9	Belgium.....	2	Vermont.....	1
Kentucky.....	7	Austria.....	2	California.....	1
Mississippi.....	7	Arabia.....	2	Poland.....	2
Indiana.....	6	Russia.....	2	Unknown.....	69

TABLE F.—*Showing the number admitted each month.*

Month.	No.	Month.	No.
1888.		1889.	
July.....	183	January.....	159
August.....	200	February.....	144
September.....	179	March.....	204
October.....	171	April.....	169
November.....	159	May.....	177
December.....	156	June.....	173
		Total.....	2, 074

TABLE G.—*Showing the number admitted each year for the past fifteen years.*

During year ended June 30—	No.	During year ended June 30—	No.	During year ended June 30—	No.
1875.....	190	1880.....	819	1885.....	1, 794
1876.....	319	1881.....	892	1886.....	1, 923
1877.....	500	1882.....	1, 102	1887.....	2, 017
1878.....	519	1883.....	1, 373	1888.....	1, 997
1879.....	642	1884.....	1, 509	1889.....	2, 074

TABLE H.

	White.			Colored.			Grand total.
	Male.	Female.	Total.	Male.	Female.	Total.	
Remaining June 30, 1888.....	28	14	42	85	78	163	205
Admitted.....	429	85	514	714	685	1, 399	1, 913
Born.....	4	3	7	89	65	154	161
Total.....	433	88	521	803	750	1, 553	2, 074
Total in hospital.....	461	102	563	888	828	1, 716	2, 279
Discharged.....	412	87	499	659	657	1, 316	1, 815
Died.....	20	6	26	135	92	227	253
Still born.....				9	5	14	14
Total.....	432	93	525	803	754	1, 557	2, 082
Remaining June 30, 1889.....	29	9	38	85	74	159	197

COLUMBIA INSTITUTION FOR THE DEAF AND DUMB.

OFFICERS OF THE INSTITUTION.

Patron.—BENJAMIN HARRISON, President of the United States.

President.—EDWARD MINER GALLAUDET, Ph. D., LL. D.

Secretary.—ROBERT C. FOX, LL. D.

Treasurer.—LEWIS J. DAVIS, Esq.

Directors.—HON. JOSEPH R. HAWLEY, Senator from Conn.; HON. JOHN J. HEMPHILL, M. C. from S. C.; HON. R. R. HITT M. C. from Ill., representing the Congress of the United States; HON. HENRY L. DAWES, of Mass.; HON. WILLIAM E. NIBLACK, LL. D., of Ind.; REV. BYRON SUNDERLAND, D. D.; HON. JOHN W. FOSTER; HON. J. RANDOLPH TUCKER; JAMES C. WELLING, LL. D.

COLLEGE FACULTY.

President and Professor of Moral and Political Science.—EDWARD M. GALLAUDET, Ph. D., LL. D.

Vice-President and Professor of History and Languages.—EDWARD A. FAY, M. A., Ph. D.

Emeritus Professor of Mental Science and English Philology.—SAMUEL PORTER, M. A.

Professor of Natural Science.—REV. JOHN W. CHICKERING, M. A.

Professor of Mathematics and Chemistry.—JOSEPH C. GORDON, M. A.

Assistant Professor of History and English.—J. BURTON HOTCHKISS, M. A.

Assistant Professor of Mathematics and Latin.—AMOS G. DRAPER, M. A.

Instructor in Gymnastics.—JOHN J. CHICKERING, B. A.

Instructor in Drawing.—ARTHUR D. BRYANT, B. Ph.

FACULTY OF THE KENDALL SCHOOL.

President.—EDWARD M. GALLAUDET, Ph. D., LL. D.

Instructors.—JAMES DENISON, M. A., Principal; MELVILLE BALLARD, M. S.; THEODORE A. KIESEL, B. Ph.; SARAH H. PORTER.

Instructor in Articulation.—MARY T. G. GORDON.

DOMESTIC DEPARTMENT.

Supervisor.—JOHN B. WIGHT.

Attending Physician.—D. K. SHUTE, M. D.

Consulting Physician.—N. S. LINCOLN, M. D.

Matron.—Miss ELLEN GORDON.

Assistant Matron.—MRS. ALICE J. BISHOP.

Assistant Matron.—Miss MARGARET ALLEN.

Master of Shop.—ALMON BRYANT.

Steward.—H. M. VAN NESS.

REPORT

OF THE

COLUMBIA INSTITUTION FOR THE DEAF AND DUMB.

COLUMBIA INSTITUTION FOR THE DEAF AND DUMB,
Kendall Green, near Washington, D. C., October 5, 1889.

SIR: In compliance with the acts of Congress making provision for the support of this institution, we have the honor to report its progress during the year ended June 30, 1889.

The pupils remaining in this institution on the 1st of July, 1888, numbered	87
Admitted during the year.....	25
Since admitted.....	19
Total	131

Under instruction since July 1, 1888, males, 102; females, 29. Of these 65 have been in the collegiate department, representing eighteen States and the District of Columbia, and 66 in the primary department.

CHANGES IN CORPS OF OFFICERS.

The vacancy in the board of directors occasioned by the death of Mr. James C. McGuire, noticed in our report of last year, has been filled by the election of Hon. John W. Foster, of Washington, D. C.

The vacancy among our domestic officers occasioned by the death of Dr. Alexander Y. P. Garnett, also noticed in our last report, has been filled by the appointment of Dr. D. Kerfoot Shute, of Washington, D. C., as attending physician.

Mrs. Alice J. Bishop, who has for the past two years been one of the matrons, has resigned her position. Mrs. Bishop's services have been valuable to the institution, and have been highly appreciated. She carries with her, in her retirement, the respect and cordial goodwill of all connected with the institution.

YOUNG WOMEN IN THE COLLEGE.

The vacancy occasioned by Mrs. Bishop's retirement will not be filled at present, for the reason that the number of young women seeking admission to the college has not been as great as was expected it would be when the doors of the college were opened to women two years ago. The number in attendance at present—eight—can be accommodated in the building of the primary department, and the directors will not ask for the erection of a special dormitory for this class of students until the need therefor is evident.

ESTABLISHMENT OF A PRINTING OFFICE.

During the past year opportunity has been given to five boys of our Kendall School to gain some knowledge of the art of printing.

A modest outfit for a printing office was purchased at a cost of \$485.87, and Mr. Harry Van Allen, a member of our college class of 1889, was placed in charge of the office.

Mr. Van Allen, who has had several years' experience as a practical printer, succeeded admirably with his pupils, and much very creditable work has been done by him and by them.

The proceeds of work done for outside parties have more than covered the pay of the instructor, while a considerable amount of printing has been done for the institution.

It is hoped that Congress will allow this very important branch of instruction to become a permanent feature in the institution.

COURSE OF INSTRUCTION AND LECTURES.

No essential change has taken place in the general course of instruction since 1887, when in our thirtieth report a detailed statement of the branches taught in both school and college was published.

During the past year special lectures have been given as follows:

IN THE COLLEGE.

Historical Sketch of Difficulties encountered in the Establishment of the National Deaf Mute College. By President Gallaudet.

Dante's Virgil. By Professor Fay.

Land of Evangeline. By Professor Chickering.

Banks and Banking as Factors in Civilization. By Professor Gordon.

Character and Policy of Queen Elizabeth. By Professor Hotchkiss.

The Religion of the Romans. By Professor Draper.

IN THE KENDALL SCHOOL.

Reminiscences of the Civil War. By Mr. Denison.

Ascent in a Balloon. By Mr. I. H. Benedict.

Daniel Boone. By Mr. J. S. Long.

The Indians of Cape Breton. By Mr. Kiesel.

Fremont's Expedition. By Mr. Bryant.

Benjamin Franklin. By Mr. Charles.

Andrew Jackson. By Mr. Ballard.

At the close of the academic year, in June, certificates of honorable dismissal from the Kendall School were given to Anna May Wood, Irene B. Martin, Harry B. Shibley, Daniel C. Watson, James Allen Wright, and Thomas Henry Peters.

THE TWENTY-FIFTH ANNIVERSARY OF THE COLLEGE.

The exercises of Presentation Day, in May last, when the completion of the first quarter century of the college was celebrated, were of more than ordinary interest.

The patron of the institution, President Harrison, presided. Many prominent officers of the Government, including Secretary Noble, of the Interior Department, were present, as also many citizens of Washington and friends of the college from a distance.

A full account of the proceedings is submitted in the appendix to this report.

ACTION OF CONGRESS LIMITING SALARIES.

Congress at its last session enacted a law, in the form of a proviso attached to the usual appropriation for the current expenses of the institution, which, if carried into effect during the current fiscal year, would, in the opinion of the directors, affect most disastrously the welfare of the institution.

Fortunately the full force of the law will not be felt until toward the close of the current year, thus giving time to bring the points involved to the further consideration of Congress.

At a meeting of the board held May 7, at which there were present the president and secretary, Hon. Henry L. Dawes, Hon. R. R. Hitt, Hon. John J. Hemphill, Hon. J. Randolph Tucker, Dr. James C. Welling, and Hon. John W. Foster, the following was on motion of Hon. J. Randolph Tucker unanimously adopted :

The board has taken into consideration the proviso contained in the sundry civil appropriation bill approved March 3, 1889, in the following words, to wit: "*Provided*, That of the above sum no more shall be expended for salaries and wages in this institution during the fiscal year 1890 than shall, with the payments from other sources, make a total for such salaries and wages for said year of \$28,000 in all." The amount allowed by the board for salaries and wages for the current year has been about \$31,000, and the same has been allowed for several years past. The board considers this sum not only reasonable, but necessary for the proper support of the educational system now firmly and successfully established and in operation in the institution, because it is not in excess of the amount allowed in like institutions elsewhere, even where the education afforded is altogether primary and not at all collegiate, and because the qualifications of professors in collegiate branches in this institution should be as great as in other colleges, and their special qualifications for teaching deaf-mutes must be peculiar and in addition to those usually possessed by professors in the same branches of learning in colleges for those who are not deaf-mutes.

The board therefore is of opinion, in full consideration, that the proviso in the aforesaid act of Congress will injuriously impair the efficiency of the institution and unjustly decrease the fair remuneration of professors for their important and peculiar duties.

The board desires that these views be officially laid before the next Congress in order that this restriction of the amount paid for salaries and wages be removed in the future, and that the deficit under the proviso above mentioned may be supplied by an appropriation of an amount sufficient to pay the just salaries and wages heretofore allowed by the board.

Resolved, That the president of the institution be instructed to lay this minute of the board before the Secretary of the Interior in order to its being included in the estimates to Congress, and be incorporated in the annual report of the president and directors to the Secretary of the Interior.

ACTION OF CONGRESS CONCERNING STUDENTS IN THE COLLEGE.

Congress, at its last session, also added to the usual appropriation another proviso, the effect of which, should it become permanently operative, would be disastrous to the usefulness of the most important and most widely known department of the institution, the college.

The proviso reads as follows :

And provided further, That deaf-mutes, not exceeding 60 in number, admitted to this institution from the several States and Territories, as provided in section 4865 of the Revised Statutes, shall only have the expenses of their instruction in the collegiate department, exclusive of support, paid from appropriations made for the support of the institution.

The policy called for by this proviso is practically a complete reversal of that pursued by the Government and the institution in regard

to the college for the twenty-five years of its existence, so far as pecuniary aid to students is concerned. Insisted on, it will close the doors of the college to the poor while leaving them open to the rich, and the commodious buildings erected by Congress for the benefit of the many deaf youth of the country will soon be tenanted by a mere handful of students.

In view of the importance of an early modification of this law the directors ask the careful consideration of the following statement of what has been the practice during the entire history of the college as to the extent of aid furnished students.

The pecuniary circumstances of every applicant have been carefully investigated, and whenever there has been an ability to pay, the full charge for board and tuition has been insisted on.

In cases where pecuniary inability has been evident, the charge for board and tuition has been remitted, always on the recommendation and at the request of the member of Congress from the district in which the applicant resides.

In no instance has the institution assumed the support of a collegiate student. Those receiving the greatest assistance have provided their own clothing and books, they have met all traveling expenses, and they have been at their own charges during the long summer vacation.

A large majority of these youths have come from homes many hundreds of miles distant from Washington. Nearly all of them have worked hard during the vacations to earn money enough to meet the expenses above referred to of travel, clothing, etc. Many of them have been employed as farm laborers, coal and iron miners, and in other severe occupations.

To the poor hearing boy, intelligent and ambitious, no matter in what position of our great country he may reside, institutions for his higher education are open within a few hours' travel. It is the boast of many of these that no deserving youth is turned from their doors for lack of means. But no door in all of these colleges is open to the deaf young man or woman who may reside even beneath the shadow of their walls.

The Government has with a generous hand established and equipped one college in which for a quarter of a century the deaf youth of the country have received privileges no greater than are offered to their more favored brothers and sisters in many of the States.

The legislation of the last Congress closes the doors of the college to all such as bear the misfortune of poverty in addition to that of deafness, and proposes to maintain, at considerable outlay, an institution the benefits of which none but the children of the wealthy can enjoy.

The directors can not believe it to be the deliberate purpose of Congress so to restrict the distribution of the advantages our college is prepared to give to such deaf youths as are capable of profiting by them. They therefore confidently appeal for a modification of the law of last March in the interest of a resumption of that more generous, may they not say more just, policy which has been heretofore pursued.

RECEIPTS AND EXPENDITURES.

The receipts and expenditures for the year now under review will appear from the following detailed statements :

SUPPORT OF THE INSTITUTION.

RECEIPTS.

Balance from old account	\$125.29
Received from Treasury of the United States	55,000.00
Received from manual labor fund	332.20
Received for board and tuition	6,443.06
Received for work done in shop	175.75
Received for work done in printing office	260.25
Received from sale of old metal and ashes	11.55
Received for damage to grounds	2.25
Received for milk sold	26.77
Received for rent of dwelling	60.00
	62,437.12

EXPENDITURES.

Expended for salaries and wages out of appropriations from Congress	27,331.14
Expended for salaries and wages out of funds belonging to the institution	4,259.20
Expended for groceries	3,734.19
Expended for repairs	3,904.50
Expended for household expenses, marketing, etc	2,519.84
Expended for meats	3,863.29
Expended for bread	1,243.66
Expended for butter	1,855.34
Expended for medical and surgical attendance	529.00
Expended for rent of telephone	100.00
Expended for furniture	541.16
Expended for lumber	754.78
Expended for dry goods, etc	982.68
Expended for gas	987.89
Expended for paints	407.21
Expended for feed, flour, etc	1,181.64
Expended for printing	52.13
Expended for medicines and chemicals	255.21
Expended for books, paper, etc	596.73
Expended for hardware	397.26
Expended for fuel	2,687.96
Expended for plants and flowers	234.75
Expended for blacksmithing	98.30
Expended for wagon and repairs	558.35
Expended for auditing the accounts of the institution and for traveling expenses of non-resident directors in attending meetings of the board	403.00
Expended for ice	266.07
Expended for manure	80.00
Expended for live stock	198.47
Expended for harness and repairs	111.07
Expended for garden seeds, etc	95.72
Expended for entertainment of pupils	55.00
Expended in fitting up printing office	485.87
Expended for china, glass, and wooden ware	462.50
Expended for freights	35.27
Expended for stamped envelopes	21.80
Expended for potatoes	133.80
Expended for illustrative apparatus	267.75
Expended for expenses of delegate attending International Congress of Deaf-Mutes in Paris	250.00
Balance	495.59
	62,437.12

ESTIMATES FOR NEXT YEAR.

The following estimates for the fiscal year ending June 30, 1891, have already been submitted :

For the support of the institution, including salaries and incidental expenses, for books and illustrative apparatus, and for general repairs and improvements, \$58,000.

For the care and improvement of the grounds of the institution, \$3,000.

Also for the current fiscal year :

For salaries and wages, in addition to the amount already allowed, \$3,000.

The reasons for the submission of these estimates were fully set forth in the letter transmitting them some weeks since, and need not, therefore, be given here. The directors, however, will beg the privilege of repeating what was said in last year's report in reference to the estimates then submitted, for the paragraphs are as pertinent in the present connection as when originally used :

It has been the uniform policy of the directors, since the foundation of the institution, to study the closest possible economy in its management consistent with the best possible results, and they have felt that the class of persons for whose benefit the institution was established, in view of the peculiar disability under which they labor, and which exists through no fault of their own, deserve educational facilities at least equal to their more-favored brothers and sisters in any part of the country.

Believing it to be the policy of the Government to do as much as this for the children of silence who are gathered within the walls of the most prominent institution in the country, the directors have authorized the submission of these estimates, and will hope for their favorable consideration by Congress.

UNVEILING OF A STATUE OF THOMAS HOPKINS GALLAUDET.

An occasion of much more than ordinary interest occurred at Kendall Green at the close of our academic year in June. Some three hundred educated deaf persons met here in convention, under an organization effected in Cincinnati, Ohio, in 1880, when the National Association of the Deaf was formed. The object of this association is to bring together the most intelligent of the class for the purpose of discussing questions of interest and importance to them.

The second meeting of the association was held in New York City in 1883, and it was there decided to provide by voluntary contributions from the deaf of the whole country a memorial of the founder of deaf-mute instruction in America in the shape of a statue to be erected on the grounds of this institution.

No long delay occurred in raising the fund for this purpose, and upwards of \$12,000 was secured, the contributors representing every State, Territory, and District of the United States. As the result of this liberality, a bronze statue of rare artistic merit has been modeled by Daniel C. French, of New York, representing Thomas Hopkins Gallaudet at the age of thirty teaching the child Alice Cogswell, interest in whom led Dr. Gallaudet to devote himself to the work of deaf-mute instruction, and was placed on the grounds of the institution, near the entrance to the chapel, a few days before the assembling of the convention. On the afternoon of June 26, in the presence of a large and interested company, the statue was unveiled and presented to the institution with appropriate ceremonies, an account of which will be found in the Appendix.

The directors feel it to be their duty, as it certainly is their pleasure, to express to the donors of this beautiful monument their appreciation

of its value and their purpose to guard it with care, that it may fulfill its high mission, giving to future generations the lessons taught by the life of a great and good man.

INTERNATIONAL CONVENTION OF DEAF-MUTES AT PARIS.

Conventions of the deaf, both local and national, have been frequently held during the past few years in this country and in Europe, but no international meeting has been called until the present year, when the "Association Amicale" of French deaf-mutes invited deaf persons from all parts of the world to join in an international convention to be held at Paris July 10-18.

The subjects proposed for discussion were "The Deaf-Mute in Society," "At Work," "In the Family," "His Relations to the Laws of his Country," and "His Benefactors from the Time of the Abbe de l'Épée to the Present Day." It was also proposed to pay special honor to the memory of the Abbe de l'Épée, founder of public deaf-mute institutions in France, the present being the centennial year of his death.

The assemblage of deaf-mutes promised to be of such importance that quite a number of the State schools for the deaf in this country sent delegates. It seemed proper that the college should be represented, and at the suggestion of the faculty Professor Draper was requested to attend the convention. An interesting report from him will be found in the Appendix.

INSTRUCTION OF THE BLIND AND THE FEEBLE-MINDED.

Provision is made by Congress for the instruction of the blind and the feeble-minded of the District of Columbia in schools for such purposes in Maryland and Pennsylvania. Applications for the benefit of these provisions must be made through the president of this institution. It seems proper, therefore, to call the attention of Congress in this report to the fact that while all blind persons of teachable age in indigent circumstances may secure the benefits of the bounty of the Government, the amount available for the feeble-minded is so limited as to be entirely insufficient to meet the cases that are now greatly in need of aid.

Every consideration of benevolence, not to say justice, demands an increase of the appropriation at the earliest possible day.

All of which is respectfully submitted by order of the board of directors.

E. M. GALLAUDET,
President.

Hon. JOHN W. NOBLE,
Secretary of the Interior.

APPENDIX.

EXERCISES OF PRESENTATION DAY.

The twenty-fifth anniversary of the college was observed in connection with the regular exercises of presentation day, May 8. President Gallaudet introduced Dr. Philip G. Gillett, for more than thirty years principal of the Illinois School for the Deaf, who offered the following prayer :

Our Heavenly Father, we thank Thee for this occasion ; we thank Thee for the civil institutions that make such an occasion possible ; we thank Thee for the spirit of the Gospel that inspires all these institutions of ours and gives us such a one as this, which is the highest, the most fitting material expression of the power of our Christianity and of our civilization ; we thank Thee, O Lord our Heavenly Father, that Thou didst put in the heart of the people of this land to take that interest, that practical interest, in the misfortunes of some of their fellows that here, as well as elsewhere, are brought together—some whom Thy hand has been laid upon in denying some of the privileges and blessings that fall to the common lot of mankind ; and we thank Thee, our Heavenly Father, that under the influence and spirit of the Gospel that Jesus Christ brought into the world these losses and these deprivations have, in some respects, been fully and more than fully compensated for.

And now we thank Thee, O Lord, for Thy blessing, which has rested upon this college, this National College for the Deaf ; we thank Thee that Thou hast watched over it during this quarter of a century, and that we are permitted upon this beautiful afternoon to join together in celebrating this twenty-fifth anniversary ; we thank Thee for the blessings that have rested upon the institution and its officers ; we thank Thee for the blessings that have rested upon its presiding officer, that Thou didst take him in the years of his early manhood and endow him with prudence, wisdom, and energy, with tact and with discretion, and that in the wise exercise of these Thou hast let Thy blessing rest on his labor, and we see here to-day in the capital of our happy land what can not be seen anywhere else upon this Thy footstool.

Now, our Heavenly Father, we pray that Thy blessing may continue to rest on this institution, upon its president, its teachers, instructors, and professors, and all of its students. We thank Thee for the blessing which has attended those who have gone out from its walls, carrying peace, happiness, and comfort to many others similarly afflicted with themselves.

We pray Thee, our Heavenly Father, that Thy blessing may rest on the class soon to take their departure ; grant that they may be truthful men and women, upright and honest, exercising all the prerogatives of citizenship in the fear of God and to the honor and glory of Thy name.

Be pleased to hear this our petition, O Lord our Heavenly Father, we humbly beseech Thee; be in all our hearts; be in all the expressions given to-day, whether oral or manual; may God himself, the Holy Spirit himself, be present to bless us, and may we feel this is the house of God, a gate of heaven to our waiting souls.

Be with us in the journey of life; may our moral and religious characters be invigorated; may the character and purposes of life be strengthened in ourselves, and as we go hence may we go being stronger in the faith. These things we ask through the righteousness of Christ, through Jesus Christ, our Lord.

Essays were then presented by members of the graduating class as follows:

Oration: The Pleasures of Home. Clarence Wilton Charles, Ohio.

Dissertation: The Nicaragua Canal. Thomas Scott Marr, jr., Tennessee.

Oration: International Copyright. Edwin Clarence Harab, Pennsylvania.

Oration: Sir Walter Scott. Joseph Schuyler Long, Iowa.

Oration: Alcestis and Cordelia. Harry Van Allen, New York.

President Gallaudet then spoke as follows:

The express which was to have brought a thesis from Omaha did not arrive in time to allow a place to be made for it on the programme. Mr. Olof Hanson, who has presented this thesis, the reading of which I with considerable reluctance omit, for it is a scholarly production and will be printed, is a young architect of Omaha, who graduated from this college three years ago with high honors; he is now before us as a candidate for a Master's degree; he has satisfied all the requirements of the faculty in the progress he has made in the pursuit of his profession, that of architecture, and I take especial satisfaction in speaking of this young man and his work since he left college, for the question is not seldom asked me, "What, in the struggle of life, can the graduates do, handicapped by deafness?" And when I can present to the audience [exhibiting plans] the original plan of a building to be erected, it is hoped, and at no very distant day, as a school building in the State of Minnesota, a design prepared by Mr. Hanson, all the specifications of the minutest details drawn out, all the plans prepared ready for the erection of the building, and these made by this very young man just three years out of the college, I feel we are justified in conferring on him the degree of Master of Arts. [Applause.]

THE FUTURE OF AMERICAN ARCHITECTURE.

By OLOF HANSON.

The little army of men who are digging the Eastern sands in the interests of archæology every now and then turn up some remains of ancient art which throw new light on the history of the human race. Great as have been the services of philology in tracing the relations of prehistoric man, its evidence is sometimes obscure, and it does not go so far back as we could wish. Then archæology comes in as a worthy assistant. Certain features of construction and ornament are peculiar to certain peoples, and when the same features are found in different countries we may be certain that their inhabitants were in some way related.

Architecture is a faithful index of the character and condition of a people. It rises and falls with civilization, and the most prominent

characteristics of a nation generally find expression in its architecture. The slavish Egyptians toiled long and drearily to pile up enormous pyramids in memory of their Pharaohs; the independent Greeks built noble temples and beautiful public edifices; the power and grandeur of Rome found expression in triumphal arches and magnificent public works, and to the influence of the church during the Middle Ages we are indebted for a number of noble ecclesiastical edifices.

It is possible, by observing the conditions under which these things were wrought, and by noting what similar conditions exist or are likely to exist in this country, to form some idea of the probable future of our architecture. The pyramids are impossible, because the conditions under which they were built can not recur. It is not probable that the military glory and subsequent grandeur of Rome will be repeated, and we may hope to avoid her extravagance. The church is not likely to obtain a dominance like that of the Middle Ages, and we may not see the preponderance of any one class of architecture to the exclusion of others. All things considered, the conditions existing here appear most nearly to resemble those of Greece. We have her independence and are favored by natural conditions. With peace, which follows civilization, internal development can not fail to result. The native resources of our country are greater than those of any other in ancient or modern times, and the expectation that we will surpass them all in wealth and prosperity is therefore not unreasonable. With all the past to learn from, and with mental powers inferior to none, there is no reason why we should not surpass our contemporaries in architecture and the fine arts, just as we seem to be fairly on the way of doing in science and the mechanical arts; and we may even strive to attain the perfection of the acknowledged masters—the ancient Greeks.

To be sure, this bright view of the future may not be warranted by a survey of the present state of the art in this country. Some one may ask, How about that essential to good architecture, truth and honesty? What about our sham cornices and tin ornaments? To this I would reply that, though there doubtless might be a great deal more truth and honesty in the world, yet I think that on the whole the Americans are as honest as the Greeks, and if Diogenes lived in these days he might not have to go around with his lantern in broad daylight and search in vain for an honest man.

Again, when we see how indifferent the greater portion of our people are to the beauties of architecture, and when our best artists are driven abroad to seek the patronage and appreciation which they fail to receive at home, some may entertain doubts as to the future of American architecture and art. But this, I believe, is only temporary and incidental to the development of a new country. Haste is the order of the day. Art can be appreciated only when we have time to admire and enjoy it. We are too busy in the pursuit of wealth to think of anything else. The acquisition of wealth is in itself a pleasure; but once gained it ceases to be so, and its possessors then seek pleasure in art and refinement which wealth and leisure enable them to patronize and cultivate. Already a number of our wealthier citizens are beginning to manifest an interest in this direction, and as their number is constantly increasing, we may well look to the future with brighter hopes.

It is encouraging to note the desire of our suburban population to make their homes attractive. Of course mistakes are occasionally made. Some designs are deficient in artistic qualities, while others, not a few, overlook the fact that, as tersely expressed by Ruskin, "Architecture is ornamental construction, not constructed ornament." But,

on the whole, there is a steady progress in the right direction. The tendency of our best architecture at present seems to be toward simplicity. Effect is sought by a judicious grouping of the principal masses, and a picturesque treatment of the roof, rather than by elaborate details and ornament. This is, no doubt, due to the demand for rapid and economical construction. Ornament when used is delicate in design, appropriate to its place, and neatly executed, in accordance with the principle that it is better to have a little ornament that is good than much that is indifferent or poor.

Our public and municipal architecture is fairly creditable, considering the circumstances of its production ; but it does not, by any means, represent the ability of our architects, since very few of the Government buildings are designed by the ablest men in the profession, the majority being designed by salaried officials in the employ of the Government. For the sake of good architecture it is to be hoped that the profession will be afforded the opportunity to demonstrate its ability in this important class of buildings, and that the best architects will be selected, as is done in the older countries, by a careful system of public competition.

The class of buildings in which we have made the greatest advance is unquestionably mercantile and business buildings. Some of our office buildings are models of convenience and elegance. Here, as before remarked, our architecture is an index of the character of the people, for we are essentially a business people. The demand for high buildings since the invention of the elevator has thrown our architects on their own resources to make the exterior appropriate, and the happy manner in which they have met and are meeting this difficulty testifies to their ability.

Much has been said about the various styles of architecture, but the fact is that very few of our buildings are constructed in accordance with any pure style. Independent as our people are in all things, we are not bound by any conventional rules of the past. Our architects feel perhaps better than those of any other country, that they are "the heirs of all the ages." We are at liberty to choose from any style and combine it with any other, the only rule by which we are bound being that the new combinations shall be harmonious and appropriate. This is not always easy, and we can not avoid making mistakes sometimes. But we will learn by our mistakes, and the result will be a far more varied and no less agreeable style than any of the past. We are not to copy the work of our predecessors without questioning, but to adapt such features as meet our requirements, and remodel them to suit our needs.

It is not my purpose to depreciate the pure classical styles. Far from it. Buildings erected according to them are often beautiful, and those who have a preference for these styles are not to be esteemed less on that account. But, in my opinion, the future architecture of America will not be any pure style or styles of the past, but a diversified combination of different styles ; not a chaotic conglomeration, but a fusion, highly varied, yet perfectly appropriate and harmonious.

It is probable that the metals will play an important part in future constructions. This, however, is of more interest to the engineer than to the architect. For, though a metallic frame work can be covered in such a manner as to resemble buildings constructed of nobler material, yet true architecture always shrinks from anything which is not what it pretends to be. If such buildings, however, are constructed without any attempt to imitate those built of other material, but rest their claim

to favor on their own merits, then they are entitled to and will doubtless receive such recognition as they may deserve.

One important difference to be noted between ancient and modern architecture is the tendency to avoid unnecessarily heavy construction and proportion. From the massive rock-cut temples of India and the ponderous columns of Karnak, to the Grecian Doric there is a long step in this direction. In the transition from the Doric to the Ionic and from the Ionic to the Corinthian, this tendency is clearly marked, and when we look at Roman and Byzantine architecture we at once notice that the aim is in the same direction, though it is not carried very far. In the Gothic cathedrals constructive skill reached its height, and in some of them there is hardly a stone which is not necessary to their stability. This tendency is in danger of being carried too far; but our best architects, while they do not waste their material, yet leave a sufficient margin of safety to give one a sense of security. Taking the present and the past as a basis for judging the future, it seems to point to the following conclusions: That our architecture will be highly varied, free and independent, combining the best features of the past in agreeable and harmonious proportions; that no particular class of buildings will predominate over others; that needlessly heavy construction and proportions will be avoided; that our domestic architecture will be picturesque and pleasant; and that inventive genius, combined with constructive skill, will develop a style of architecture which will be broader and grander than anything of the past and a worthy representative of a great people.

REMARKS OF PRESIDENT GALLAUDET.

President Gallaudet continued: Next on the programme is the name of the Rev. James Henry Cloud, of Illinois, who is down for an oration on the subject of The Physical Basis of Education. Mr. Cloud was a classmate of Mr. Hanson's, and graduated from this college three years ago. He accepted a position in the Illinois School for the Deaf as instructor and director of physical training, assuming the charge of a large school of more than five hundred pupils, directing their physical training, having a fine gymnasium in which to conduct that service. Mr. Cloud has made a study of anatomy; he has made a study of physical training; he has been under the instruction of Dr. Sargent, at Cambridge, during his vacations, and has proved an eminently successful teacher of physical development. But that is a small part only of the work he has been doing during the past three years. The necessity for laboring and earning money to aid members of his family was upon him. But his aim was to study for the ministry, and so side by side with this work which he has most creditably done, he has pursued theological studies necessary to his acceptance and his ordination, which occurred within the past month, as a deacon in the Episcopal Church. So he stands upon our catalogue, three years after leaving college, as the Rev. James Henry Cloud; and in view of his attainments in his theological studies, and in the other lines I have spoken of, our faculty have recommended him to the board of directors for the degree of Master of Arts, and that degree has been conferred upon him as upon Mr. Hanson. His purpose is to minister, as a clergyman, to his own class, and for that service there is a demand and need which is unquestioned, and which asks for just such laborers as he is.

The members of the graduating class, whose essays have been presented to you to-day, are now presented by vote of the faculty to the

directors as candidates for degrees—two of them for the degree of Bachelor of Science, and three of them for the degree of Bachelor of Arts.

I present these gentlemen as candidates for these degrees if, Mr. President, you will allow me to address you as patron of our institution, certainly our most welcome guest to-day, not only for reasons personal to yourself, but because you represent to us that great beneficent Government, the liberality of which, expressed now through a quarter of a century of generous appropriation, has made this college, this only college for the deaf that now exists, or has ever existed, possible. And here, upon the bounty of the Government mainly, has our work been done, and we present these young men to you, members of the board of directors, as candidates for the degrees which the faculty feel they have fairly earned by the course of study they have pursued. [Applause.]

Twenty-five years ago, in the month of April, the Senate of the United States was asked to consider a bill proposing to give to the directors of this institution, then a small primary school for the deaf, the authority to confer such degrees as are usually conferred by colleges. The suggestion excited some ridicule in the Senate, and wonder was expressed that it was thought possible deaf-mutes could ever achieve a collegiate course. There were those, however, who championed the cause of the higher education of the deaf, and after a spirited discussion the Senate of the United States unanimously agreed to give power asked for to the directors of this young school for the deaf. The House soon concurred in the action of the Senate, and a few weeks later exercises were held in the city of Washington, in which it was announced to the public that a college for the deaf was inaugurated. It had no students; it had no professors; it had no money; it had no house, but it had the spirit to do the work, and those who were imbued with that spirit announced their purpose to the world and invited the attendance of those who might seek to come here to this little school to enter upon the higher education.

On the occasion of those public exercises, those who were especially interested in the carrying forward of the new enterprise were cheered very greatly by the presence of a friend who represented at the same time the colleges and the Congress of the country. This warm-hearted friend put courage into the hearts of those who were then taking up the work, which has since developed here, in an address, the closing words of which I will ask you to listen to.

You have now founded the first college in this country for the education of the deaf and dumb. Are there any here disposed to distrust the auspices of this day, or despair of the final success of this Christian enterprise, which marks so clearly the character and the progress of the age, let them call to mind the history of American colleges.

The University of Cambridge, ancient and venerable, the *alma mater* of a long line of illustrious sons who have gone forth from her halls, though now lifted into affluence by the munificence of a wise and grateful people, in its infancy was sustained by the neighboring husbandmen with liberal gifts of beans and corn, wheat and rye, and other products of the soil. Those were the days of small things to the institution, but faith wrought with her works until she finally triumphed. Dartmouth College, with which I have the honor to be connected, and whose bright record of alumni unrolls through nearly a hundred years; which has sent forth such men as Poor, and Goodale, and Wright, to erect the standard of Christianity on benighted shores; which has given to the bar and the State, among other imperishable names, a Webster and a Woodbury, a Choate and a Chase, and the venerable statesman whose munificence has founded this institution, and whose presence gladdens these festivities, was at the first only a tent pitched in the wilderness by the elder Wheelock, for the education of Indian youth.

But you have laid the corner-stone of your college in the midst of wealth and in the very capital of the nation, where, beyond peradventure, the treasures of a generous people will be poured out to supply the necessities of the institution that is eyes to the blind and ears to the deaf.

Your college can not fail to succeed, and will yet, I trust, be a blessing to many generations of the children of misfortune. Gladly, sir, do I welcome your institution to the circle of colleges, and your faculty to the fellowship of scholars devoted to kindred labors. You have entered upon an enterprise that involves great responsibilities and years of toil. Often will your mind alternate between hope and fear. Often will you lie down to rest perplexed with care and saddened with wearisome duties; but remember, through all, that your works will follow when—

“The stars shall fade away, the sun himself
Grow dim with age, and nature sink in years.”

The friend who so warmly encouraged us twenty-five years ago became, not long after, the first director of our institution representing the Senate of the United States, and through a series of years his aid was most efficient in Congress, in the early development of this institution, through times that were critical and through experiences often depressing. I am sure, when I have said all this, you will join with me in feeling it is an especial pleasure that this same friend, who was with us twenty-five years ago and associated with the institution, not only as director, but afterwards as preceptor, lecturing on natural science on several occasions, and so taking a place in its faculty, is with us to-day to give us his greeting on our twenty-fifth anniversary and to encourage us to still better work in the future. I have the great pleasure and honor of introducing to you, as orator of the day, ex-Senator and superintendent of public instruction in New Hampshire, James W. Patterson, who will now address you. [Applause.]

ADDRESS OF HON. JAMES W. PATTERSON.

If, as we are told, demand and production are reciprocal in the economy of nature as in the economy of business, then the senses may have been products of our environment, and the blind fish of the cave, if brought to the light, might in time recover his lost sight, or new senses be acquired if future conditions should demand it. Congenital deafness, inherited from deaf or too closely related ancestors, illustrates, it is claimed, the pressure of a universal law, which man must heed in the conduct of life if he would improve the physical condition of the race. Such theories may have their value as philosophical speculations; but if one in every two thousand or fifteen hundred of our population is a deaf-mute, we have thirty or forty thousand, exiled by birth or accident from the world of sound, who can not wait to theorize on the laws of heredity, or for a force of nature to unstop the avenue of hearing. These short-lived unfortunates can not defer their deliverance for a gracious miracle of evolution. Their hope is in the development of the potential power that slumbers in the remaining faculties. This is what modern science, inspired by the spirit of Christian love, has been doing for the last hundred years.

The blindness, cruelty, and moral inertia of the natural man, as seen in his treatment of the deaf, is a humiliating fact in human history. During the earlier ages congenital deafness, which closed the chief inlet of intelligence and barred the avenue of social intercourse, was deemed a visitation of divine wrath, and the poor victim was destroyed to save the family honor, or classed with the idiotic and insane and treated as an outcast from the functions and sympathies of society.

In the earliest civil code which has come down to us a restriction is laid upon this brutality of man. The prohibition of the Mosaic law

was, "Thou shalt not curse the deaf, nor put a stumbling-block before the blind, but shall fear thy God."

The Brahminical law, though it excluded the deaf from the inheritance of property, provided for their support by the nearest heir. The Romans gave full civil rights to the accidentally deaf who could write, but denied them to all others of the class. The grand orations, the splendid poems, and the profoundest utterances of Greek philosophy give not a glimmer of the light of modern science on this dark problem. The dictum of Aristotle was, that the deaf are wholly incapable of intellectual instruction. To that age and country the loss of hearing barred forever the gate of knowledge; and as late as the fourth century it was thought by the saintly Augustine that even the gates of heaven had been closed to these smitten children of God. He declared that faith was impossible to the deaf because they could not learn letters, through which faith could be acquired.

But the great Founder of our faith taught a diviner philosophy than this, and by miracles prophetic of a better age opened the eyes of the blind and unstopped the ears of the deaf. The spirit of Christianity, toiling in the gloom of fifteen dark centuries, has slowly developed both the possibility and the method of educating these unfortunate children of the state.

At first, and for many years, the effort was personal and tentative, and had to work its way against universal distrust and prejudice.

But numerous individual instances of remarkable success in educating the eye to do the work of the lost sense, and in substituting the older language of signs for that of speech, slowly demonstrated the possibility of bringing the deaf, as a class, into the functions and enjoyments of general society. This recognized possibility brought with it a sense of duty, and about the middle of the last century schools for deaf-mutes began to be opened on the Continent and in England, which at the beginning of the present century were in many instances adopted by governments as public institutions. The first in this country was established at Hartford, Conn., in 1817, by the honored father of the president of the college whose quarter-centennial we have this day met to celebrate. Other institutions followed, and provisions were made in most of the States for the education of this class of their population, by such methods as ingenuity and experience had devised for that purpose. The enlightened civilization of our century, humanized and inspired by the genius of Christianity, has brought thousands of American children in each generation, since the founding of these schools, from a worse than Siberian exclusion into the circle of human sympathies and responsibilities.

As the number of deaf-mutes multiplied, a call was heard for a college where teachers not only skilled in the different systems of their art could be trained, but where teachers disciplined and cultured in the higher ranges of scholarship might be educated.

Students who had tasted of the fountains of knowledge began to thirst for classic literature, and to yearn for the deeper problems of science and history.

As we should have anticipated, here in the capital of the latest, freest, richest nation of the world, where thought spurns the trammels of prescription, and where the education of all the people is both a patriotic and a religious duty, the first seat of higher learning for the deaf came into existence, but with perhaps more than the usual hardships attending the birth of such institutions.

The success, however, which has attended the college has richly com-

pensated its founders for all their labors, and has crowned with perpetual gladness and enduring fame him whose pregnant thought and incessant care laid its foundations, and have guided and guarded its interests through all these years of trial. This son has added luster to the name of an honored father by planting an institution that will perpetuate his memory through successive generations of the children of misfortune.

We who are accustomed to receive unconsciously the good things of life through all the senses are not liable to apprehend the real beneficence and greatness of the work to which this institution has been dedicated. The deaf, banished to the silence, seclusion, and solitude of their own minds, neglected by their fellows, and tantalized by intimations and mysteries which they could not fathom, were often misanthropes, and always exiles from the realm of business, the educating pleasures of intercourse, the republic of letters, and the spiritual kingdom planted by the divine Nazarene.

But education has been to them a revelation, both of humanity and of God. The intellectual and moral life kindled in these silent students has rendered them efficient and successful in all the industries and in many of the professional callings of their day. It has brought them into immediate and constant communication with the living world through the language of signs, and so flooded their thoughts with ideas and awakened wit and wisdom in minds otherwise torpid and vacant.

As an illustration of this, a student of the institution once wrote for me—his face the while glowing with fun—"We are all for Grant at the college, for he is the first mute ever proposed for high office." The same young man having been made an examiner of patents, rose rapidly by dint of skill and quickness of apprehension to the head of his calling, and has since held a leading place in a prominent firm of patent lawyers. I do not speak of this one as pre-eminent, but as a fair representative of his class.

This inflow of ideas brings an unconscious growth of faculty which results in practical ability worth to the community a hundred-fold the cost of educating these wards of the nation.

But I would not measure the utility of the institution solely by material results. Its curriculum opens an unobstructed entrance to the rich and exhaustless fields of literature and science, as fruitful of pleasure and profit to the children of silence as to us.

Articulate speech and written language are both inventions evolved from man's necessities for the communication of ideas. Oral speech speaks to the ear, and is the medium of daily intercourse for which the deaf have a manual substitute that speaks to the eye. But written symbols of thought are the language of the absent, whether living or dead. Through books the republic of letters is perpetuated, and the accumulated intellectual wealth of the past transmitted from generation to generation. But it is the receptive spirit of the scholar, not of the unlettered, that the genius of other ages kindles into a flame.

The philosophy, science, and arts which the master minds have produced find no congenial soil in the abodes of barbarism. Only educated intellect finds solace and nourishment in the mental products of the gifted men of other centuries. But how the splendid treasures of science, song, and devotion, inherited from the past, were to be made available to the unhearing was a difficult problem to solve. As only about one-third of one per cent. of the scholars in our public schools continue their studies through a collegiate course, it was obvious that the number of deaf students in any one State desiring such an education

was not sufficient, twenty five years since, to justify the founding of such an institution by any local or State government. But there was a demand in the country for one such institution. That the national Government, at this juncture, should come forward in the spirit of the purest and loftiest civilization, and in the face of strong opposition and the denial of constitutional authority, and found and maintain a college in which the choicest of these beneficiaries of the Republic could be lifted into the fellowship and functions of scholars is a peculiar and lasting glory to the nation.

In this seat of learning, under the patronage and guardianship of the Government, teachers of schools of a lower grade are prepared for their work. Here a knowledge of the chemical laws and mechanical forces which underlie the extended and marvelous industries of the age is acquired by numerous thoughtful and ingenuous youth. Here they are brought to comprehend the complex social and political institutions of their country, to feel a patriotic pride in its inventions, its achievements, its enterprise, and its history, and to participate in the pulsations of life that throb through its whole organism. Here, too, they are to be permanently impressed with ideals of a true and noble manhood, and inspired with a controlling desire to be and to do whatever is worthy of a great and manly character. In these halls the student, by an unconscious growth, is prepared to play his part in the active duties of living men, and for the passive enjoyments of the scholar's retreat. Though deprived of the free interchange of thought and the sweet converse of men, he is prepared for silent communion with the noble dead. The great thinkers, the master spirits of all the ages, will come and speak to him as to us, in the silent symbols of thought. His communion with Kepler and Newton, with Homer and Shakespeare, with Plato and Burke, will be as unobstructed and uplifting as ours. The affiliation of the educated deaf with the past in its varied phases of literature, science, and history, and with current thought and activity as they find expression in print, is even more intimate than if they were distracted with the senseless babble of a noisy public. Habituated to reflection, they are quick to utilize the inflow of ideas from their environment and intellectual heritage, and to transmute what have been technically designated percepts and receipts into personal intelligence. Sagacity, common sense, and that instantaneous judgment that seizes the right in emergencies and threads its way by an inward light through a labyrinth of perplexities are results of mental assimilation, which has transfused into the intellect its objective observations and experiences. Creative genius is not the offspring of barbarism, but of a high and prolonged culture. Reading and observation yield a residuum of golden conceptions in the crucible of thought; otherwise they are like streams that are lost in the sands of the desert.

The mentality of the public is overwhelmed and benumbed by the worse than worthless stuff with which it is flooded by an indiscriminating and omnivorous press. It signifies nothing to the public that Bridget has committed suicide, Bill Nye lost a fourth-class clerkship, and some unheard-of had a fit of indigestion. This endless iteration of trifles debases good taste and weakens the intellectual digestion. It would be well if we could all stop our ears at times, and give a chance for the growth of mental power by legitimate reflection.

Nature furnishes moral compensations for the material evils we suffer. There is no affliction so grievous that it may not be made the spring of the supremest blessings. A deaf man *may* become a misanthrope, but he escapes many of the perils of our social and political life. He can

not hear the songs of birds, the music of running brooks, and the melody of human voices, but he may be enthralled with the sublime utterances of poetry, may thrill with the power of thought and throb of passion which the genius of eloquence pours like subterranean rivers beneath the crust of language, and he may be entranced with a harmony

“Too fine and too sublime for mortal ears
In our dull orb of clay.”

He can not listen to the debates of councils, nor to the frenzied oratory of the political arena, which at each quaternion saves the country from direful calamities and impending ruin, but, in the records of history, he may meditate upon the rise and fall of states, the growth and decay of civilizations, the wisdom and folly of great leaders, and trace the evidences of a divine purpose moving through and shaping the destinies of the race. He can not be heard in the mad crowd at the stock board, nor become a king of the lobby, but by the helps of science he may trace down the marvelous orders of creation till the teeming millions vanish in infinite minuteness on the descending scale of life, or lift his eyes into the deep vault of the starry heavens and ponder upon the grandeur and glory of countless systems of suns and worlds till he is lost in the upward reach of limitless power.

To him to whom the voices of the world are hushed how inexpressible the privilege that, when alone with himself, in the silence of his own mind, he may commune at will with the purest and greatest of all the centuries and grow strong and lovable by the contact.

And yet there is a loftier height to which these silent children of the republic have been lifted by the labors of this Christian century. Ere this, St. Augustine, from his sphere of bliss, has seen these whom he pronounced incapable of faith reverently searching the canon of revelation, and feeding their spiritual life upon the best thought of all the Christian ages. No love has been more sweet and beautiful, no lives more patient and saintly, no aspirations more devout and sincere, than are found in these schools of the deaf. The pity of God has touched their hearts, and they hear the voice of the Master saying, “Thy faith hath saved thee; go in peace.”

But public eleemosynary institutions are not an unrequited charity, nor purely a matter of grace to the unfortunate.

“The quality of mercy is not strained:
It droppeth as the gentle rain from heaven
Upon the place beneath: it is twice blessed;
It blesseth him that gives, and him that takes.”

These institutions give back to the Republic, each generation, an army of ingenious producers more numerous than Washington led in the war of Independence. Such a body of able, virtuous, responsible citizens is a gift that establishes a claim to public respect and support, for such citizens are a national necessity. To disregard the teachings of history, and assume that this country must work out some preconceived optimistic destiny in spite of popular folly and recklessness; that liberty and progress can here survive popular ignorance and corruption—would be a fatal fallacy.

The ultimate defense of republics is in the character of the people, not in military organizations. If the source of power is rotten, if public morals are honeycombed by corruption, if the majority of the people have no intelligent appreciation of the ends and functions of government and no unconquerable love for it, then the republic is only the

baseless fabric of a dream of liberty, ready to fall as Rome did in the shock of contending parties.

Monarchies may stand on force, but self-government has its security in intelligence, virtue, and patriotism; and these qualities can not be planted in masses and majorities by an act of legislation or by a political campaign. They can not be extemporized in an hour of peril, for they are personal and are the growth of years. Public sentiment, intelligence, patriotism, and virtue are but the aggregation of these qualities in individuals, and their force in national life is determined by the degree and extent of their development.

In this day of rapid transit and universal intercourse; in this day when science and mechanism have given a miraculous power of production, and are tempting men away from subjective to objective fields of labor, the supreme duty of government is to educate its people. We can not afford to lose in each generation the assimilative and conservative power of thirty thousand educated natives of the country. If national wealth, power, and glory were the supreme objects for which governments are instituted, or if they measured the rights of man, we might hesitate to urge the claims of misfortune upon the sympathies of the nation. But that is not the foundation of our splendid heritage. The humblest American child can plead the prerogatives of a royal lineage at the doors of the Capitol. With more than Roman pride he can repeat, "I, too, am an American citizen," and demand to be educated to the full measure of the duties for which he will be held responsible as a citizen.

An American scholar, standing in the opening years of a new century, and contemplating the fruitage of thought and virtue which the civilizations of other lands have given to this, and the fiendish fury with which nations, maddened with the lust of empire, have darkened the annals of history, can not fail to realize the latent possibilities that slumber in the future of this people. As the mightiest physical force is potential in the action of invisible molecules, and may blast or bless the earth, so the power of a hundred millions of people, undeveloped in the children of the Republic, may be so directed as to realize the hopes of a truer and grander state, or be left to curse and ruin the posterity that ere long must fill our places.

If domestic peace and happiness are to prevail, if social order and sectional harmony are to reign through all our borders, if our vast resources are to be developed into diffused wealth and utilities, if national resources and power are to advance with the years, if our liberties are to be maintained and our virtues multiplied, the foundations for these things must be laid below the stratum of business and politics, in the families and schools of the land. Public neglect of or indifference to the educational interests of the country will eat like a dry rot into the frame-work of the Republic.

Among the educational institutions of the country the position of the college for the deaf is unique and peculiar. It stands as the representative head of the schools of a separate and special class, and is entitled to the sympathy and support of the nation. It descended into the angry strife of civil war, like a peaceful evangel from Heaven to the afflicted children of silence, revealing the deep philosophy of history, the richest thought of the gifted of the ages, and the divine utterances of the Prince of Peace. An offspring of love, born in the shock of fraternal strife, it took its place like the storied palladium as a pledge of perpetual union between the contending States of the Republic. Henceforth an institution of the nation, it should be the pride of all sections, and be cherished as a dispensary of public beneficence,

that its influence and fame may increase through centuries of unbroken peace.

At the conclusion of ex-Senator Patterson's address President Galaudet said:

MR. PRESIDENT, LADIES, AND GENTLEMEN: I had purposed to ask your attention to a short address, giving some results of the work of this college during the past quarter of a century and speaking of some of its troubles and trials, but the lateness of the hour admonishes me to fall back on a rule which obtains in Congress, and I will ask of our directors leave to print at some future time the information I had ready to give you.

I would like to call attention to the fact that this college has been recognized abroad, and that we have hanging on the wall two diplomas, with medals, which have been given to this college by the Governments of Chili and France at the occasion of their international exhibitions, when we sent to them statements giving accounts of the peculiar work of this college; and we have received those recognitions for the advance made beyond anything done elsewhere in the world in the education of the deaf.

We have to-day congratulatory letters from several friends of the college. I take great pleasure in saying that Senator Edmunds, who was the successor of Senator Patterson as a director on the part of the Senate, expresses great regret at being unable to be present and great interest in the college; ex-Secretary Bayard, one of the directors, sends a letter stating that absence from the city made it impossible for him to be here. I have also an interesting letter from Hon. Joseph Chamberlain who, a year ago, when in this country, visited this college and expressed great interest in its work. He expresses great gratification that we have reached our twenty-fifth anniversary and gives us his earnest wishes for the future success and prosperity of the college. I have letters also from three gentlemen in England, eminent in the profession of teaching the deaf, Drs. Buxton, Elliott, and Stainer, begging to join in the congratulations of the day. And, perhaps most interesting of all, I have a letter from a gentleman eminent in Belgium not only for his interest and efficiency in promoting the cause of the deaf in his own country, but also that of the deaf of his own church in England and in India, a gentleman who was a constituent member of the convention which organized the present Government of Belgium in 1830, and continuously a member of the Belgian Parliament for more than fifty years; and now, at the advanced age of eighty, he writes a letter of warm greeting to the college and says that he is watching its career with great interest and takes great pride in its success, and, in apostolic fashion, has sent his portrait—Monseigneur De Hearne, a prelate of the Roman Catholic Church, a warm friend of this country, a noble man, one who has done great work for the education of the deaf in the world.

These greetings cheer us, and give us courage for our future work; and it now only remains for me, Mr. President, to announce the conferring of a few honorary degrees. You may perhaps remember that Columbia College, at her centennial celebration, conferred a very large number of honorary degrees upon those who had been eminent as educators and in literary work. Columbia College, celebrating her centennial, had a right to confer many degrees; but our directors yesterday felt, as we had reached but a quarter of a century, we must be sparing in the honors we gave in the profession of teaching the deaf who seem to deserve them. So I am authorized to announce that the degree of Doctor of Humane Letters has been conferred on the following per-

sons, and I will name them and briefly speak of their work in the education of the deaf:

Upon Monseigneur D. Hearne, of whom I need say nothing more than to point to his portrait, and who eminently deserves honor from this college;

Upon William D. Kerr, of Missouri, who has now lately retired from a long principalship of the institution he established more than thirty years ago at Fulton, and has managed during all these years with eminent ability and prudence;

Upon Warring Wilkinson, of California, who was the almost pioneer and the organizer of a very successful institution, for many years the only one on the Pacific slope, and who has there conducted in most scholarly and admirable fashion the work of educating the deaf in that part of the country;

Upon Job Williams, the principal of the mother school of all the schools for the deaf in this country, that of Hartford, Conn., a man with many years of experience and successful work as manager of a successful and eminent school for the deaf;

Upon Jonathan L. Noyes, whose presence we are glad to have with us here to-day as representing one of the maturer institutions of the country in Minnesota, which he, too, had the honor to organize, and which he has had the credit of conducting for, I believe, more than a quarter of a century;

Upon Miss H. B. Rogers. I believe it is not out of order to make a lady an honorary doctor. The precedent has been set by several of the colleges of our country, and certainly our faculty and our directors feel that Miss Rogers, who was the founder of the first oral school for the deaf in this country, and who was, therefore, the pioneer of a great and most beneficent work for the deaf which has now been accepted and incorporated in the system of teaching the deaf in this country, and who was the first woman to be at the head of an institution for the deaf in this country, and, so far as I am aware, in the world, deserves this honor. Miss Rogers conducted for more than twenty years the Clarke Institution for the Deaf at Northampton, Mass.

This completes the list of those who are now received as honorary alumni of our college.

Our exercises will be closed with the benediction and prayer by the Rev. Thomas Gallaudet, D. D., rector of St. Ann's Church for Deaf Mutes, New York City. Dr. Gallaudet was with us years ago, when our college was inaugurated, and it is pleasant to have his benediction now, as we had his prayers then:

'Almighty and most merciful Father, we would bring the proceedings of this impressive occasion to a close by again acknowledging Thy fatherly hand in all the vicissitudes of our earthly pilgrimage. Help us to feel our dependence on Thee in all the duties and responsibilities and privileges to which Thou hast called us; help us, we pray Thee, to accept Thy blessed Son, who came to take our nature upon Him, not only as our savior from sin, death, darkness, and ignorance, but also as the light that lighteth every man that cometh into the world. For His sake give us the holy, purifying, and elevating influences of Thy spirit, so as to enable us to work out the great purposes of life which Thou hast committed to us. We thank Thee for all the blessings of these twenty-five years in the history of this college. Again we ask Thy blessing to rest upon those who have contributed in any way and those who have come here to learn. Bless, we pray Thee, all interested, the Government of our country, the President of these United States, and all in au-

thority. All who are called upon to exercise official duties in connection with this institution, the secretary under whose direction this college is officially placed, help him and help all, we pray Thee, Oh, Lord, in the discharge of their duties. Accept and bless us; pardon our sins; help us to be grateful for all Thy blessings; and lead us on, we pray Thee, to that blessed life which Thou hast promised through Thy dearly beloved Son, in whose words we would close this, our humble petition: 'Our Father which art in heaven. Hallowed be Thy name. Thy kingdom come. Thy will be done in earth, as it is in heaven. Give us this day our daily bread. And forgive us our debts, as we forgive our debtors. And lead us not into temptation; but deliver us from evil: For Thine is the kingdom, and the power, and the glory, forever. Amen.'"

The peace of God which passeth all understanding, keep your hearts and minds in the knowledge and love of God and Jesus Christ, his son, and the blessing of God the Almighty Father, the Son, and the Holy Ghost be amongst you and remain with you always. Amen.

At the close of the academic year, in June, the degree of Bachelor of Arts was conferred upon Messrs. Harry Van Allen, of New York, Clarence Wilton Charles, of Ohio, and Joseph Schuyler Long, of Iowa; and the degree of Bachelor of Science on Messrs. Edwin Clarence Harrah, of Pennsylvania, and Thomas Scott Marr, of Tennessee.

Diplomas of honorable dismissal were awarded to Charles R. Hemstreet, of Iowa, Laurence F. James, of Illinois, John Schwirtz, jr., of Minnesota, Frederick M. Kaufman, of Michigan.

CATALOGUE OF STUDENTS AND PUPILS.

IN THE COLLEGE.

From Connecticut.

George Chauncey Williams.

From Delaware.

John C. Jump.

From Illinois.

Charles D. Allard.
Georgia Elliott.
Lulu O. Herdman.
Fredo Hyman.
Lawrence F. James.
William G. McIntosh.
Oscar Regensburg.
Grace Rhodes.
Charles D. Seaton.
William I. Tilton.

From Indiana.

Theodore Holtz.
Oscar Shaffer.

From Iowa.

William W. Beadell.
Charles R. Hemstreet.
Paul Lange, jr.
Ellsworth Long.
Joseph Schuyler Long.
Edwin Pyle.
David Ryan.
Hobart Lorraine Tracy.

From Maine.

Amos Barton.

From Maryland

Frank A. Leitner.
Alto M. Lowman.

From Massachusetts.

George T. Sanders.

From Michigan.

Fred Max Kaufman.
James M. Stewart.

From Minnesota.

Ralph H. Drought.
Jay C. Howard.
John Schwirtz, jr.
Thomas Sheriden.
Cadwallader Lincoln Washburn.

From Missouri.

Hannah Schankweiler.
Stephen Shuey.

From Nebraska.

Louis Andrew Divine.
Margaret Ellen Rudd.

From New York.

Phillip H. Brown.
Rosa Halpen.
Ralph Waldo Howard.
Martin Milford Taylor.
Harry Van Allen.
H. Earl Wilson.

From Ohio.

Clarence Wilton Charles.
Theodore Christian Mueller.
William Henry Zorn.

From Pennsylvania

Lilly Amabel Bicksler.
Harvey D. De Long.
William De Witt Himrod.
Gurney T. Hosterman.
Edwin Clarence Harah.
John Mutchler Kershner.
Maggie A. McGinnis.
W. R. McIlvaine.
Charles R. Neillie.
Agatha Tiegel.
Oliver J. Whildin.

From Tennessee.

Thomas Marr, Jr.
Michael Maddern.
Alton Odom.

From Texas.

Ida M. Sartain.
Robert M. Rives.

From Wisconsin.

Richard Ernest Dimick.
Thomas Hagerty.
Benjamin F. Round.
Harry L. Stafford.

From District of Columbia.

Frank G. Wurdeman.

IN THE PRIMARY DEPARTMENT.

Females.

Mary Jane Booth, District of Columbia.
Ida Boyer, Delaware.
Jeannette Dailey, District of Columbia.
Mary Dailey, District of Columbia.
Elizabeth Fagin, Delaware.
Maggie Hyde, Delaware.
Nellie Lynch, Delaware.
Gertrude Parker, Delaware.
Mary D. K. Sendkin, District of Columbia.

Millie Searles, Montana.
Lucy Smith, District of Columbia.
Eva Webster, Montana.
Irene B. Martin, District of Columbia.
Eleanor M. Perrette, Indiana.
Mary Ann Primeau, Indian Territory.
Bertha May Whitelock, Delaware.
Anna May Wood, Montana.
Annie Zeust, District of Columbia.

Males.

Anthony Allen, District of Columbia.
Walter Argo, Delaware.
William Argo, Delaware.
Ernest Bingham, North Carolina.
Asbury Arnot, Indiana.
William Brown, District of Columbia.
William H. Catlett, District of Columbia.
Frank Carroll, District of Columbia.
Harry R. Carr, District of Columbia.
Oliver J. Clarke, South Carolina.
J. W. Clarke, Wyoming.
George R. Courtney, District of Columbia.
Alfred H. Cowen, Canada.
Hugh Dougherty, District of Columbia.
Ralph H. Drought, Minnesota.
August C. Essig, District of Columbia.
Maurice T. Fell, Delaware.
Henry J. Gilroy, District of Columbia.
Eugene E. Hannon, District of Columbia.
Thomas F. Harrihill, New York.
Herbert Hurd, Delaware.
Herbert Jump, Delaware.
Charles H. Keyser, District of Columbia.
George E. Keyser, District of Columbia.
Sidney W. King, Virginia.

Robert Kleberg, Texas.
Charles E. D. Krigbaum, District of Columbia.
Joseph M. Landon, District of Columbia.
Edward W. Lane, Montana.
John Henry Lay, Montana.
Marcellus J. Laube, Virginia.
George M. Leitner, Maryland.
Paul D. Hubbard, Colorado.
William Lowell, District of Columbia.
Simon Mundheim, District of Columbia.
George W. McDonald, Nebraska.
Sheldon Miller, Mississippi.
Thomas H. Peters, Montana.
Henry H. Rohrer, Ohio.
Frank Stewart, District of Columbia.
Harry B. Shibley, Arkansas.
Richard Thomas, District of Columbia.
Hiram T. Wagner, Mississippi.
Daniel C. Watson, Tennessee.
Henry Willis, District of Columbia.
James Allen Wright, North Carolina.
John Walsh, Indiana.
David H. Wolpert, Colorado.

REGULATIONS.

I. The academic year is divided into three terms, the first beginning on the Thursday before the last Thursday in September, and closing on the 24th of December; the second beginning the 2d of January, and closing the last of March; the third beginning the 1st of April, and closing the Wednesday before the last Wednesday in June.

II. The vacations are from the 24th of December to the 2d of January, and from the Wednesday before the last Wednesday in June to the Thursday before the last Thursday in September.

III. There are holidays at Thanksgiving, Washington's Birthday, Easter, and Decoration Day.

IV. The pupils may visit their homes during the regular vacations and at the above-named holidays, but at no other time, unless for some special, urgent reason, and when only by permission of the president.

V. The bills for the maintenance and tuition of pupils supported by their friends must be paid semi-annually, in advance.

VI. The charge for pay pupils is \$250 each per annum. This sum covers all expenses in the primary department except clothing, and all in the college except clothing and books.

VII. The Government of the United States defrays the expenses of those who reside in the District of Columbia, or whose parents are in the Army or Navy, provided they are unable to pay for their education. To students from the States and Territories who have not the means of defraying all the expenses of the college course the board of directors renders such assistance as circumstances seem to require, as far as the means at its disposal for this object will allow.

VIII. It is expected that the friends of the pupils will provide them with clothing, and it is important that upon entering or returning to the institution they should be supplied with a sufficient amount for an entire year. All clothing should be plainly marked with the owner's name.

IX. All letters concerning pupils or applications for admission should be addressed to the president.

X. The institution is open to visitors during term time on Thursdays only, between the hours of 10 a. m. and 3 p. m. Visitors are admitted to chapel services on Sunday afternoons at a quarter past 3 o'clock.

XI. Congress has made provision for the education, at public expense, of the indigent blind and the indigent feeble-minded of teachable age belonging to the District of Columbia.

Persons desiring to avail themselves of these provisions are required by law to make application to the president of this institution.

REPORT
OF THE
SUPERINTENDENT OF THE YELLOWSTONE NATIONAL PARK.

DEPARTMENT OF THE INTERIOR,
YELLOWSTONE NATIONAL PARK,
OFFICE OF SUPERINTENDENT,
Mammoth Hot Springs, Wyo., June 1, 1889.

SIR: Having been relieved from duty, with my command, in this National Park, I have the honor to submit for your information this report of the operations of the office of the Superintendent of the Yellowstone National Park for the period from August 15, 1888, to the present date.

During the season of travel to the Park, which closed October 31, 1888, probably a larger number of people visited the Park than in any previous year. By a careful estimate from the various hotel-registers, and registers of camping parties, kept at this place and the Lower Geyser Basin, the number was placed at about six thousand.

No disorder of any magnitude occurred during the season, and no complaints of extortion or of unfair treatment, except such as were incident to the crowded condition of the hotels and the insufficient accommodations which they afforded, were received.

On the 19th of August, 1888, a man was arrested by one of my scouting parties near the southern border of the Park, having in his possession the outfit of a hunter and trapper, and to all appearances engaged in trapping beaver. He was brought to this place, and upon examination gave his name as Andrew S. Page, but was identified as a person who was arrested in June, 1887, under suspicious circumstances near the Upper Geyser Basin, and who then gave his name as John Andrews. He at that time made his escape from his captors, leaving his outfit in their possession. He finally admitted that he was the same person. He was then told that if he would produce any evidence of his honesty of purpose, or would find anybody who would vouch for his future good behavior, his property would be restored to him. This he stated he would do, and was permitted to take one of his horses to go in search of the required evidence. He has not since been heard of, and the property which was taken from him still remains in custody at this place.

September 11, 1888, one William Moore, an employé of the Yellowstone Park Association, was expelled from the Park for repeated acts of drunkenness and disorder.

On the 12th of September, 1888, Thomas Garfield was arrested by a scouting party from my command, on Willow Creek, within the Park, in the act of trapping beaver. He had in his possession several green beaver-skins and the freshly-killed carcass of a beaver. He was ex-

pelled from the Park and his outfit held subject to the orders of your Department.

A report of this case was made to the Department September 13, 1888, and instructions asked concerning the disposition of the property seized, to which no reply has been received. This man at the time of his expulsion made threats that he would get even with the Park. It was subsequently ascertained that he came back into the Park during the night of the 14th, and efforts were made to apprehend him, but without success.

On the 17th of the same month the non-commissioned officer of my command, in charge of a detachment stationed at the Norris Geyser Basin, discovered a fire in thick timber about 4 miles from Norris in the direction of Mount Holmes. He, with his detachment, started at once for the scene of the fire, and by hard work succeeded in extinguishing it. He found near the place at which the fire was started the tracks of a man, which, from the character of the imprint, was believed to be Garfield. This belief was confirmed by the arrest of Garfield on the trail leading from Mount Holmes by one of my sergeants stationed at Riverside, on the west side of the Park. He was again put out, and after hanging around the western border of the Park for a few days disappeared, and has not since been heard of.

On the 10th of February Mr. Edward Wilson, scout and guide, accompanied by Corporal William L. Boyce, of my troop, started on a snow-shoe scout through the Park. They were overtaken by stormy weather and a heavy fall of light snow, which made snow-shoe travel very difficult, and after visiting the different geyser basins returned, having been absent ten days.

On the 10th of March the same two men started again to carry out the object of their previous expedition, which was to visit the warm-spring basins on the east side of Yellowstone Lake, for the purpose of ascertaining whether or not they were the winter resorts of the buffalo. These basins, being surrounded by a net-work of fallen timber and swampy ground, are well-nigh unapproachable, except when the ground is frozen and covered with deep snow, so as to make snow-shoe travel possible. The men took with them ten days' rations on their backs, but were absent twenty days. They encountered unexpected difficulties, owing to the soft character of the snow, and some anxiety for their safety was felt after their absence had been prolonged. This expedition was successful in locating the buffalo in their haunts of the previous winter near the hot-spring basins on the divide between the waters of the Yellowstone and Madison Rivers. Although no buffalo were seen east of the Yellowstone, it was evident from the abundant signs that they habitually frequented the hot-spring basins in this locality, some of the signs being quite fresh.

The past winter having been unusually mild, with a light snow-fall, was favorable to the game, which has been seen in all parts of the Park in undiminished numbers. Bands of elk approached within sight from this place several mornings in succession, and a large herd of antelope could be seen from the town of Gardiner during a large portion of the winter. The early disappearance of the snow, consequent upon the light snow-fall of the previous winter, and an early spring, was taken advantage of by the officer in charge of road construction and repair in the Park, and work was begun upon the roads in this vicinity about the middle of March. Working parties were sent into the Park on 15th of April.

Visitors to the Park began to arrive as early as the 1st of May.

The hotels of the Yellowstone Park Association were opened to visitors on the 15th of May, and at this date there is a fair volume of travel to the Park.

FOREST FIRES.

I report with great satisfaction, that although last season was an exceptionally dry one and the conditions all favorable to the spread of forest fires, no destructive fires within the limits of the Park occurred. In this connection great credit is due to Lieut. T. M. Moody, Twenty-second Infantry, and the detachment under his charge, as well as to the enlisted men of Troop M, First Cavalry, for the energy and devotion to duty displayed in their efforts to extinguish and keep under control the many fires which were started by the carelessness of camping parties, and from other causes. Many fires were extinguished which would otherwise have wrought great destruction.

LEASES AND BUSINESS PERMITS.

On the 22d day of March, 1889, the Yellowstone Park Association, having surrendered all rights which it had acquired under a lease which had been granted on the 9th day of March, 1883, to Carroll T. Hobart *et al.*, and by the said lessees assigned to the Yellowstone Park Improvement Company, and which had been sold under a decree of the United States court for the Territory of Wyoming, and by virtue of which sale the Yellowstone Park Association claimed title; and also all rights under a lease granted on the 29th day of January, 1884, to George W. Marshall for a certain piece of land in the Park, and which had been assigned to the Yellowstone Park Association; and the Yellowstone Park Association, by Charles Gibson, its president, and Charles Gibson individually, having delivered up the lease made by the Department to Charles Gibson March 20th, 1886, for certain lands in the Park, and the said lease having been declared canceled, the Department, on the 20th day of March, 1889, granted to the Yellowstone Park Association six leases of ground in the Yellowstone National Park, as follows: At Mammoth Hot Springs, 3 acres; at Norris Geyser Basin, 1 acre; at Lower Geyser Basin, 2 acres; at the Grand Cañon, 2 acres; at Yellowstone Lake, 1 acre, and at the Thumb (so called) of the Yellowstone Lake, or on Shoshone Lake, 1 acre.

The Department also, on the 5th day of April, 1889, granted permission, subject to certain conditions, to the Yellowstone Park Association to place a naphtha launch on the Yellowstone Lake, the said launch to conform to certain specifications.

February 14, 1889, the Secretary of the Interior granted permission to Ole Anderson, subject to certain conditions, to engage in the business within the Park of placing small articles in the waters of the hot springs, to be incrustated with the deposit left by the water, and of selling such coated articles to tourists, the privilege being personal and non-assignable. On the same date the Department granted to Mrs. Jennie Henderson Dewing, postmaster at Mammoth Hot Springs, the privilege of keeping for sale in the post-office at this place photographic views, stationery, etc., the privilege to continue only during Mrs. Dewing's term of office as postmaster.

On the 3d of April, 1889, permission by the Department was granted to the medical officer attached to the military force to practice medicine in the Park, with the understanding that such practice will not conflict with any Army regulations.

TRESPASSERS IN THE PARK.

Attention is invited to remarks under this head contained in my two previous reports. No trespass has occurred since my last report.

HOTEL ACCOMMODATIONS.

On this subject attention is also invited to my report for the year 1888. At the date of this report no improvement has been made in the character of the accommodations provided for visitors.

TRANSPORTATION.

During the rush of travel to the Park in the months of August and September last the transportation facilities provided by the Yellowstone Park Association, through its agent, George W. Wakefield, were inadequate to the requirements of travel. The surrounding country was scoured, and animals and vehicles of every description were brought into requisition. Many visitors were forced to ride through the Park in uncomfortable and unsuitable conveyances, or otherwise to forego the object of their visit. Fortunately no serious accidents occurred. This immunity, when the character of the outfits and drivers employed is considered, may rather be ascribed to good fortune than to any proper precautions on the part of the Yellowstone Park Association or its agents.

ROADS.

There being no appropriation available, no road work was done in the Park during the year 1888, except some very slight repairs in the spring of that year to open the roads for travel. The appropriation for the fiscal year ending June 30, 1889, having finally become available, work was commenced as early as the 18th of March last, and has been vigorously prosecuted to date.

The road from the northern border of the Park to Gibbon Cañon has been put in a perfect state of repair. The approach to the hotel plateau from the Gardiner River has been greatly improved by the construction of a new piece of road about one-half mile in extent. The gap in the existing system of roads, of about 3 miles, between Swan Lake and Indian Creek, has been filled, and a substantial bridge placed across Indian Creek.

Work is now in progress on the new road through the cañon of the Gibbon River, with a prospect of its completion to a point beyond the cañon before the end of the fiscal year. Work is also in progress upon the extension of the road to the Grand Cañon, across Cascade Creek, and down the cañon as far as Lookout Point.

PROTECTION AND GOVERNMENT OF THE PARK.

The legislation by which this National Park was brought into existence was unfortunately defective, in that it failed to provide any effective method for its government or protection.

Section 2 of the act approved March 1, 1872, provides:

That said public park shall be under the exclusive control of the Secretary of the Interior, whose duty it shall be, as soon as practicable, to make and publish such rules and regulations as he may deem necessary or proper for the care and management of the

same. Such regulations shall provide for the preservation from injury or spoliation of all timber, mineral deposits, natural curiosities, or wonders within said Park, and their retention in their natural condition.

The Secretary may in his discretion grant leases for building purposes for terms not exceeding ten years of small parcels of ground at such places in said Park as shall require the erection of buildings for the accommodation of visitors. All of the proceeds of said leases, and all other revenues that may be derived from any source connected with said Park, to be expended under his direction in the management of the same, and the construction of roads and bridle paths therein. He shall provide against the wanton destruction of the fish and game found within said Park, and against their capture or destruction for the purpose of merchandise or profit. He shall also cause all persons trespassing upon the same, after the passage of this act, to be removed therefrom, and generally shall be authorized to take all such measures as shall be necessary or proper to fully carry out the objects and purposes of this act.

The inadequacy of mere rules and regulations, unsupported by any appearance of force or penalties for their infraction, soon become apparent, and there has been hardly a report rendered relating to the Park during the eighteen years of its existence in which the necessity of some further provision of law for its preservation and government has not been urged.

A full account of all the various methods and expedients which have been resorted to since the establishment of the Park in the endeavor to protect it would exceed the limits of this report, but brief allusion to some of them may serve to illustrate the difficulties and uncertainties which have surrounded the subject, and to emphasize the necessity which exists for the adoption of some definite and well-considered scheme of government. In the summer of 1882 the unchecked vandalism of visitors and the destruction wrought by forest fires had reached such a point, that the application of some remedy appeared absolutely necessary, if any portion of the Park was to be preserved, and the Department, in despair, it would seem, of any Congressional action, determined, under the authority contained in the act of dedication, to lease considerable portions of the Park to persons believed to be responsible, in the hope that they would, through self-interest, give it that care and protection which the Government had failed to give. This action of the Department seemed to invite attention to the deplorable condition of the Park, and it may be believed induced more liberal appropriations, thereby permitting the employment of a larger number of assistant superintendents, and at least an attempt at better protection. It was also provided by the act approved March 3, 1883, that—

The Secretary of War, upon the request of the Secretary of the Interior, is hereby authorized and directed to make the necessary details of troops to prevent trespassers or intruders from entering the Park for the purpose of destroying the game or objects of curiosity therein, or for any other purpose prohibited by law, and to remove such persons from the Park if found therein.

Under this authority a troop of cavalry passed a portion of the summer of 1883 in the Park, but it does not appear that it was called upon to engage actively in its protection.

The weakness of a government unprovided with any means for the enforcement of its established rules continuing to be apparent, the legislature of Wyoming, in the winter of 1884, passed "An act to render operative and effectual the laws of the Territory of Wyoming within that portion of the Yellowstone National Park lying within said Territory, and to protect and preserve the timber, game, fish, and natural objects and curiosities of the Park, and to assist in preserving the rights of the United States therein." This act, which was approved March 6,

1884, made the portion of the Park lying within Wyoming Territory a part of Uintah County; provided for voting precincts and for the election of justices of the peace and constables; extended the laws of Wyoming Territory over the portion of the Park within that Territory, and provided that the rules and regulations of the Secretary of the Interior for the government of the Park should have the same force in the Park as the laws of Wyoming Territory. Section 7 of this act provided—

That it shall be unlawful for any person, whether resident or visitor, to deface, injure, or remove any part, portion, or particle of the natural curiosities or objects of interest, or anything whatever, within the Yellowstone National Park, whether tree, rock, stone, shrubbery, earth, geyser formation, grass, or anything whatever, except that it may be permissible to use timber or any other thing not objects of curiosity or of interest or adding to the scenic attractions of the said Park, for the necessary purposes of fuel or house-building or any domestic, useful, or necessary purpose not prohibited by the laws of the United States or the rules and regulations of the Secretary of the Interior, and any person so offending shall be guilty of a misdemeanor, and shall, on conviction thereof, be punished by a fine not exceeding \$100 or by imprisonment in the county jail not exceeding six months.

Section 8 provided for the protection of the game of the Park, and fixed pains and penalties. The act further provided that a jail should be established in the Park; that the expenses of all criminal prosecutions and the salaries of the justices of the peace and constables should be paid by the Territory of Wyoming; and that one-half of the fines assessed against offenders under the provisions of the act should be paid to the informers.

Judged by the stringency of its provisions, this act should have afforded to the Park all needed protection, and yet it completely failed in its object. Vexatious arrests were made under the sweeping provisions of section 7 of the act, and it soon became evident that its tendency was to defeat the principal object for which the National Park was established. Instead of a "pleasure ground for the benefit and enjoyment of the people," it seemed likely to become a place where visitors would be subject to arbitrary arrest and serious annoyances for the most ordinary and innocent actions.

The indignation aroused by certain arrests, which appeared to have been made without sufficient cause or justification, together with the uncertainty which existed as to the authority of Wyoming Territory to exercise judicial powers within a national reservation which had been placed by law under the exclusive control of the Secretary of the Interior, caused the repeal of the obnoxious act March 10, 1886.

The repeal of this ill-considered and unwarranted act was a necessity, but as it was the first and only law under which judicial authority had been exercised in the Park, the first effect of its abrogation was to leave the Park in a worse plight than ever before. It became generally known that the superintendents had no support beyond the rules and regulations of the Department and their own personal force, and as a result the rules and regulations were ignored, while outlaws and vagabonds from the surrounding region made the nation's pleasure ground a place of refuge. The hotels were frequented by gamblers and adventurers who preyed upon the unwary tourist, while forest fires, originating mysteriously in remote and inaccessible places, raged unchecked. During the summer of 1885 a committee of Congress visited the Park for the purpose of inquiring "into the expenditure of public money for the Yellowstone Park and the administration of the laws applicable to said Park, whether any change should be made in said laws or the boundary of the Park, and what steps, if any, can be taken to make of practical benefit and utility that portion of the public domain."

This committee remained in the Park five days and took a quantity of testimony bearing upon the subject of inquiry.

The Park was at this time under the government provided by the Wyoming statute. The following extracts, taken from the majority report of this committee, signed by two members who visited the Park and one absent member, are of special interest in connection with this subject:

The magnificent mountain scenery of this Park, as well as the wonderful display of the forces of nature in foaming fountains, boiling lakes, marvelous and awe-inspiring geysers, great mountain sheets of water, and the great falls of the Yellowstone seem to have fully justified the policy of setting apart this marvelous region as a national park.

Hotels are established, or are being established, in the vicinity of each of the most interesting objects, and the persons to whom special privileges have been given for this purpose have a special object in protecting them from wanton injury by inconsiderate travelers and curious tourists, even if such protection was necessary.

None of these natural curiosities, however, are of a nature which exposes them to material injury; and if they were so exposed to deterioration and injury, a much larger force than has ever been contemplated would be necessary to protect them, as they are not only numerous, but scattered over a vast extent of country.

Nor is the police force, superintendent, and assistants, eleven in all, of special value for this purpose. A favorite purpose has been the protection of the wild animals—buffalo, elk, deer, bear, etc.—of the Park, animals which are so rapidly disappearing from all parts of the Great West. But in so extended a mountain region it is scarcely possible, even with every reasonable precaution, that these animals can be protected from the cupidity of the hunter and the wanton and more than savage barbarism that has exterminated the herds of buffalo that a few years ago pastured in countless numbers on the great prairies. It will be seen from the testimony in the appendix how improbable it is that any of these animals will for any considerable period remain, even in imagination, an interesting feature of this Park.

But on the subject of "utility," mentioned in the provision of law under which this committee was appointed, connected with the real interests of the Park for the enjoyment of all the people of the United States, the preservation of the forests, which clothe with verdure the valleys, rugged declivities, and mountain peaks of the whole region, are of special moment.

These magnificent forests, while adding beauty to the rugged grandeur of these mountain ranges, are of the highest value to extended regions of country.

In the Park are found the sources of the great rivers west of the Mississippi—the Yellowstone, and Snake Rivers; the one, traversing an immense region of fertile land, swells the waters of the Missouri, while the other is a main branch of the Columbia.

It is made very clear by the practical and scientific views presented of this subject in the testimony already presented that the regular flow of water in these rivers is greatly dependent on these forests. These mountain regions are of no value for agriculture, while their wealth of forests is of the highest economic value, besides the beneficent influence they probably exert over the rain-fall, temperature, and climate of a vast region of country.

The irrigation of the magnificent valleys of the Yellowstone is believed greatly to depend on the gradual and regular flow of water in that beautiful river, greatly dependent on these protecting forests. It is believed that the rapid flow of water from these mountain regions, from barren range of peaks and declivities, would produce wide-spread disaster in valleys even remote from the mountains.

It is therefore, in the judgment of the committee, of the highest moment that these forests should be protected from destruction either by fire or the axe. To this extent, having in view at once the beauty of the Park as a delightful resort for the people and the value of the great streams of water that issue from the mountains, as well as the benign influence of the forests on climate and health, this Park should receive the special care of the Government.

The committee further submit, for reasons above named, that the region of country to the width of 30 miles on the east side of the Park and 8 miles on the south—a mountainous region of the same general character with the Park, barren ranges covered with forest—should be reserved forever from sale and the forests protected from destruction.

Beyond the dedication of this "tract of land" as a "public park or pleasure ground for the benefit and enjoyment of the people," and placing the same under the control of the Secretary of the Interior and appropriating of late years \$40,000 a year for the improvement of its roads and providing a police force for its protection, Congress up to this time has done nothing in relation to the Park; and yet, except in extortionate charges of those permitted to build hotels and carry on business in the Park

for the public convenience, there is no cause for complaint. The roads now reach every object of special interest. The Park should, as far as possible, be spared the vandalism of improvement. Its great and only charms are in the display of the wonderful forces of nature, the ever-varying beauty of the rugged landscape, and the sublimity of the scenery. Art can not embellish these.

The sum of money heretofore of late years annually appropriated of \$40,000 is more than ample to continue the construction of roads, the salaries of the police force, and contingencies, but the appropriations to each purpose should be specific. In the opinion of the committee the only important duty of a police force—superintendent and assistants—in the Park is to protect the forests from fire and ax.

This report recommended—

That the boundary line dividing Montana and Wyoming on the north of Wyoming be changed so that the strip of land on the north end of the Park now in Montana shall be made a part of Wyoming, and that the western line of the Park be the western line of Wyoming as now established, and that the strip of land 8 miles wide immediately south of the Park and the strip of land immediately on the east side of the Park to the width of 30 miles be reserved from sale, and a stringent law enacted against the destruction of the forests thereon.

A report of the minority of this committee, signed by two members who visited the Park, states as follows:

While agreeing generally in the conclusions of the committee as to the Yellowstone Park, we do not agree that sufficient roads have been constructed in the Park. On the contrary, new roads should be constructed to many places of interest in the Park, and much of the road built at an early day, and not under the direction of an engineer officer of the Army, needs to be relocated and reconstructed; and while we agree that the most important duty of the superintendent and assistants in the Park "is to protect the forests from fire and the ax," yet we are of opinion that it is important to protect the objects of interest from injury, especially at the hands of the relic hunter and the professional collector of specimens, and the game from injury or destruction.

It may be presumed that the failure of Congress to make any appropriation for payment of the salaries of the superintendent of the Park and his assistants for the fiscal year ending June 30, 1887, was due to the influence of this report. The effect of this failure was to abolish these offices, and the only method remaining for the protection of the Park was that provided by the act of March 3, 1883. Under this authority a troop of cavalry, under my command, was ordered into the Park, arriving at this place August 17, 1886.

All of the circumstances connected with my administration of affairs in the Park having been previously reported, it will suffice to state here that the general method of Park government pursued since the date above mentioned has been that of a military reservation, re-enforced and guided by the rules and regulations established by your Department and the authority of the statute law.

During the first year recourse was had with considerable frequency to the authority which permits offenders to be removed from the Park, but since it has become known that the National Park can not be made a resort for vagabonds and outcasts and that any serious or intentional violation of the established rules is quite certain to result in arrest and expulsion, with possible pecuniary loss, comparatively little difficulty has been experienced. The penalties for violation of the rules not being severe, it has been considered important to make it generally understood that they could not be violated without reasonable certainty that detection with some punishment, or at least inconvenience, would follow. By a liberal distribution and posting of the published rules and regulations and by timely admonition and warning it has been the endeavor to prevent the commission of offenses rather than to seek opportunities to inflict penalties.

The people residing in the vicinity of the Park have seen that their interest lies in supporting the authorities and in encouraging an observ-

ance of the reasonable and just regulations which have been established.

Hunters and trappers have not been permitted to operate within the limits of the Park, and the game animals under the protection afforded have visibly increased and multiplied. Good order, peace, and quietness have generally prevailed. Life and property has been secure, and many thousands of visitors from every part of the civilized globe have been permitted to enjoy the wonders of nature undisturbed by fears of molestation or uncalled for espionage.

These statements as to the satisfactory condition of the Park with respect to law and order are not made for the purpose of vaunting the superiority of present methods of government and protection over all others, but to show that by the use of an organized and disciplined force, respect for the established rules and regulations and the rights of life and property can be maintained. And it is believed that to the extent in which the present method of government and protection is an improvement upon former methods it is due to the visible power and force of the National Government as represented by the military garrison in the Park.

It is not to be inferred that the claim is made that a military government is the only one practicable for the Park, or even that it is the best adapted or most suitable. It is believed, however, that no efficient protection can be given to the Park without the support of a well-organized and disciplined police force of some description.

In my report to your Department for the year 1886 I recommended the following appropriations for the protection of the Park :

For pay of one superintendent.....	\$3, 000
For pay of one chief game-keeper.....	1, 200
For pay of ten assistant game-keepers	9, 000
For pay of one chief of police.....	1, 200
For pay of twenty policemen.....	18, 000
For pay of one clerk.....	900
Total.....	33, 300

I am now of the opinion that on account of the extension of the system of roads and the increase of summer travel the number of policemen should be increased to thirty, thus making the total to be paid for salaries \$42,300. The equipment of this force would probably cost \$6,500 additional, making the cost of protection, not counting the subsistence of necessary animals, \$48,800.

In view of previous appropriations made for this purpose this estimate may appear somewhat excessive, and yet from my acquaintance with the subject I am convinced that any attempt to accomplish the object sought with a less force of civilians or with decreased salaries must result in failure. This sum would also appear moderate when compared with the annual amount expended in the support of the military force which now performs the duty of protection in the Park.

The present status of this subject with reference to the employment of a military force for the protection of the Park is in a very unsatisfactory condition. The uncertainty which surrounds it may be presumed to preclude the establishment of a military post in the Park of sufficient capacity for a garrison large enough to perform the duties of Park protection well and efficiently without risking any impairment of military efficiency in the force so employed, and necessitates the employment of temporary and less-effective means with a maximum of discomfort to the troops so employed.

The officer in command of the troop has during the past three years performed, in addition to the duties of his position, those civil duties which pertain to the office of the superintendent of the Yellowstone National Park without compensation other than such recognition of his services as has been accorded by your Department. In alluding to this subject there is no intention of complaining. The duties to which reference has been made have been cheerfully and willingly performed, as they will doubtless be by other officers of the Army under like circumstances. But it is an exceedingly anomalous condition of affairs which ought not to prevail indefinitely and as a matter of course.

The time would seem to be fully ripe for a definite settlement of the question as to the means to be employed in the protection and government of the National Park, and as my connection with the Park ceases with the rendition of this report, I deem it a suitable time to urgently invite your attention to the importance of this subject.

The annoyance experienced by the hunting operations of bands of Bannock Indians from the Fort Hall and Lemhi Agencies in Idaho has been the subject of frequent communications to the Department of the Interior during the past two years. In the month of January last copies of certain reports rendered by Peter Gallagher, Indian agent at the Fort Hall Agency, and J. M. Needham, of the Lemhi Agency, to the honorable Commissioner of Indian Affairs, having been furnished me for my information, and in the reports a general denial that the Indians referred to had hunted in the vicinity of the Park having been made, I, on the 12th of February last, submitted to the Department a report on the subject supported by a number of affidavits. The receipt of this report not having been at this date acknowledged, and as the subject appears to be of sufficient importance to require your attention, I append it to this report, marked A.

In my experience in connection with this National Park I have been very forcibly impressed with the danger to which it is subjected by the greed of private enterprise. All local influence centers in schemes whereby the Park can be used for pecuniary advantage. In the unsurpassed grandeur of its natural condition it is the pride and glory of the nation; but if under the guise of improvement selfish interests are permitted to make merchandise of its wonders and beauties it will inevitably become a by-word and a reproach.

In the last two annual reports which I have submitted to your Department I have had great pleasure in acknowledging the services rendered in the protection of this National Park by Mr. Edward Wilson, the scout and guide employed at this station under the authority of the War Department. In taking leave of the National Park I deem it my duty to again bear witness to his faithful, zealous, and courageous performance of the difficult duties with which he has been charged.

I have this day transferred to Capt. F. A. Boutelle, First Cavalry, the records of the office of the superintendent of the Yellowstone Park, the public property pertaining to the Department of the Interior for which I am accountable, and certain property which has been taken from persons violating rule 5 of the Rules and Regulations of the Yellowstone National Park, together with your instructions of the 24th ultimo for the disposition of the same which were received yesterday.

I am, sir, very respectfully, your obedient servant,

MOSES HARRIS,
Captain First Cavalry.

The SECRETARY OF THE INTERIOR,
Washington, D. C.

A.

DEPARTMENT OF THE INTERIOR,
YELLOWSTONE NATIONAL PARK, OFFICE OF SUPERINTENDENT,
Mammoth Hot Springs, Wyo., February 12, 1889.

SIR: I have the honor to acknowledge the receipt of your communication of the 2d ultimo, by indorsement upon copy of letter from the Commissioner of Indian Affairs, dated January 19, 1889, referring to me the said letter and accompanying inclosures for my information, and, in connection therewith, to submit the following: The letter of the Commissioner of Indian Affairs and the correspondence transmitted therewith have reference to two communications from this office to the Department, dated respectively May 4, 1888, and August 24, 1888. In that of May 4 attention was invited to the annoyance occasioned in previous years by the hunting operations in the vicinity of this National Park of parties of Bannock Indians from the Fort Hall and Lemhi Reservations, and requesting that such timely instructions might be given as would prevent these Indians from approaching the Park boundaries. With reference to this letter a communication was received, dated Office of Indian Affairs, May 23, 1888, and signed by the Acting Commissioner, A. B. Upshaw, in which it was stated that letters had been addressed "to the United States Indian agent at Fort Hall and Lemhi Agencies, instructing each to adopt adequate measures to keep their respective Indians from entering the Park or going into the vicinity of the same."

On the 24th of August, 1888, having received reliable information that a party of Bannock Indians, supposed to number about one hundred, men, women, and children, were hunting in the country just south of the Park, and that an Indian and his squaw had come into the Park as far as the Grand Cañon of the Yellowstone, I addressed a communication to the Department, reporting the facts, and stating that it was evident that the instructions to the Indian agents at the Fort Hall and Lemhi Agencies "to adopt adequate measures to keep their Indians from entering the Park or going into the vicinity of the same," had not been complied with.

In this communication I also stated that during the summer of 1886, as a result of telegraphing the Department that Indians from Fort Hall and Lemhi were approaching the Park, the two agents came into the Park, and after having visited the various objects of interest, returned without seeing their Indians; also that upon a similar occasion in the summer of 1887 the agent from Lemhi came into the Park, and making the regular tour, returned to the agency, paying no attention whatever to his Indians, who were in the mountains near the Park line.

The United States Indian agents at the Fort Hall and Lemhi Agencies having each been instructed to report concerning the correctness of the allegations contained in the before-named letter submitted reports to the Office of Indian Affairs, that of the agent at Lemhi being dated September 25, 1888, and that of the agent at Fort Hall December 12, 1888. In both of these reports denial was made in more or less explicit terms to all statements in my letter which implied any neglect of duty on the part of these Indian agents, and in both of them strong doubt was expressed as to the correctness of the report that Indians from their agencies were hunting in the vicinity of the National Park. These reports appear to have been accepted by the Indian Bureau as satisfactory, and it would appear that no further action in the matter is considered necessary by that office. I have no desire to enter into a controversy on the subject. My letter of August 24, 1888, was written with the sole object of discharging my duty of protecting this National Park. I had at this time no acquaintance whatever with the Indian agents at the Fort Hall and Lemhi Agencies, their names even being unknown to me, and my only object in alluding to their failure to gather in their Indians on previous occasions was to induce such instructions as would tend to the employment of more efficient methods for the restraint and control of their Indians.

I am persuaded, however, that all the statements contained in my letters to the Department dated May 4, 1888, and August 24, 1888, respectively, are substantially correct and irrefutable.

The essential and important part of this matter is to determine whether or not Indians from the Fort Hall and Lemhi Agencies did camp and hunt in the vicinity of the Yellowstone National Park during the months of August and September, 1888, and in this connection I invite attention to the affidavits submitted.

The affidavit of Mr. Elwood Hofer, marked A, alleges that a large party of Bannock Indians were camped on Pacific Creek in the month of August, 1888, about 10 miles south of the National Park, and engaged in hunting in the direction of the Park; and further, that on the 24th day of October, 1888, on the Snake River, about 9 miles south of the southern boundary of the Park, he found a camp of seven lodges of Bannock Indians, who stated that they were from the Fort Hall and Lemhi Agencies; that these Indians had been engaged in hunting, and had in their possession a large quantity of dried meat and hides; that they started back to their agencies with a large number of animals packed with dried meat, and that they went towards the

southwest corner of the Park, saying they were going to hunt on Fall River, which is within the Park; and that at this time a forest fire was raging in the country immediately south of the Park line, which had destroyed a large extent of forest; and that in his opinion this fire had been started by Indian hunting parties for the purpose of facilitating their hunting operations, or through the careless use of fire.

The band of fourteen lodges of Bannocks which were found by Mr. Hofer on Pacific Creek, in the month of August, were also reported to me by Nelson Garnell, who is employed as a Government scout at Fort Washakie, Wyoming. He estimated the band at about one hundred, men, women, and children.

About the time this report reached me two Indians were seen near the Yellowstone Falls who said they were from Beaver Cañon, but their trail was followed in a southerly direction to near the border of the Park, and there is little doubt that they belonged to the band which camped on Pacific Creek.

The presence of these Indians in the Park is vouched for by the affidavit of Private James J. Pearson, a soldier of Troop M, First Cavalry, marked B. These Indians were also seen by a large number of tourists, and their presence in the Park gave rise to much alarm and uneasiness among the tourist visitors.

The affidavit of Mr. Edward Wilson, my scout, and Saddler Joseph M. Loyns, of my troop, marked respectively C and D, established the fact that seven lodges of Bannock Indians, who said they were from the Fort Hall and Lemhi Agencies, were in camp on Snake River from 4 to 6 miles south of the Park line on the 7th of September, and that they said they had been there about ten days; that they were engaged in hunting, and that they had in their possession large quantities of elk meat, and that two destructive forest fires were raging in the vicinity of this camp. Mr. Wilson states that from his knowledge of the habits of these Indians he thinks it probable that these fires were either intentionally started by these Indians or that they originated through their careless use of fire.

The affidavit of Mr. Charles H. Stuart, marked E, doubtless relates to this same band of Indians. They stated to him that they had been hunting on Huckleberry Mountain, which is near the edge of the Park, its northern slope being within the Park. Mr. Stuart also saw the forest fires alluded to in other affidavits. It may be inferred that this is the same party which was seen near this place by Mr. Hofer as late as the 24th of October.

More evidence can easily be obtained on this subject, but I have accepted that which is at hand, which is believed to be perfectly reliable, and sufficiently conclusive as establishing the fact that Indians from the Fort Hall and Lemhi Agencies were engaged in hunting in the immediate vicinity of the National Park during the months of August, September, and October, 1888; and that therefore the inference expressed in my letter of August 24, 1888, that the United States Indian agents at the Fort Hall and Lemhi Agencies had failed to obey their instructions to "adopt adequate measures to keep their respective Indians from entering the Park, or going in the vicinity of the same," was correct and warranted by the facts of the case. It not unfrequently happens that well-taken measures fail to accomplish the object to which they are directed, but the correspondence connected with this case fails to show that any measures whatever were taken by these agents to prevent their Indians from hunting in the vicinity of the National Park, except indefinite verbal cautions and warnings.

The agent at Fort Hall, Mr. P. Gallagher, wrote me under date of September 27, 1888, saying that he had cautioned his Indians "time and time again about the Yellowstone and Lost River countries, and insisting that under no circumstances must they go to the places mentioned." This well illustrates the indefinite and vague instructions which these Indians may be presumed to have received. The Lost River is in Idaho, several hundred miles west of the Yellowstone National Park, and the Yellowstone country is generally understood as embracing the valleys of the Yellowstone River and its tributaries. Now, it has never been charged that the Bannock Indians visited the Yellowstone country, nor do I believe that any of them have done so during the past three years. The hunting operations of these Indians, which have injured the National Park and which have been complained of, have been carried on on the tributaries of the Madison, on the west of the Park, and on those of the Snake River to the south, and all of my communications to the Department have so indicated.

Agent Gallagher telegraphed the Commissioner of Indian Affairs September 24, 1888, that many of the Indians were off their reservations, hunting without passes. He was instructed by the Commissioner of Indian Affairs by telegraph the same day "to ascertain by correspondence with the superintendent of the Park, or otherwise, whether any of his Indians were in the vicinity of the same, and if so to carry out the instructions of the 17th instant," which were "in the event of any of his Indians being near the Park to go immediately after them and take them back to their reservation." On the 26th of September I telegraphed Agent Gallagher:

"Twenty-five Indians from Fort Hall Reservation were 4 miles south of Park on Snake River September 7th; have no later information."

To which he replied by letter on the 27th "that so much time had elapsed that he presumed it was hard telling where they then were." These Indians were permitted by him to remain 4 miles from the Park line and secure many pack-loads of meat from game protected in the Park a month after he had been informed of their location, and in defiance of the instructions which he had received from the Indian Bureau. This agent puts forward the excuse that his Indian police are inefficient, and that the Indians are very hard to manage, and intimates that there is danger of war if an attempt is made to confine them to their reservation. With this condition of affairs I have nothing to do, and can only express my regret that the efforts which are being made to protect the remnant of the large game of this country and the growing timber in the National Park and adjacent regions are to be thwarted for no better purpose than to afford summer amusement and winter sustenance to a band of savage Indians, who might better be engaged in cultivating the arts of peace and civilization. With reference to the personalities contained in the report of Mr. Gallagher, as they can have no bearing upon the merits of this controversy, I have no remarks to make. I have no reason to doubt the correctness of Mr. Gallagher's statement that when he visited the Park in the summer of 1886 he remained only from Saturday to Monday, and visited only two of the geyser basins, but I think that he should not have been disappointed at his failure to find his Indians at these places. They are well known not to be good hunting grounds during the tourist season.

The agent at the Lemhi Reservation, Mr. J. M. Needham, in a communication to the Commissioner of Indian Affairs, dated May 31, 1888, with reference to his instructions "to adopt effective measures to keep the Indians of his agency away from the Park or its vicinity," says very plainly that he is unable to control his Indians; "that they are of a roving disposition, and have gone when and where they pleased in spite of all he had been able to do to prevent them from so doing." In view of this, his assertion in his letter to the Commissioner of Indian Affairs of September 25, 1888, as to the entire falsity of the matter contained in my letter of August 24, 1888, and his confident expression of belief "that there is not a single Indian from his reservation at or in the vicinity of the Park" is somewhat surprising.

He seems to rest his assertion concerning the falseness of the statement made in my letter upon the evidence contained in the letter itself. Upon re-reading this letter I find that it was stated that the Indians who were reported as near the Park were believed to be from the Fort Hall Agency.

The Indians from these two agencies on their hunting trips generally travel and camp together, and it is not always easy to ascertain which agency they are from, and the failure to associate the Lemhi Agency with Fort Hall in my letter was an omission.

I am unable, however, to see that this proves the statements contained in the letter to be false, and trust that the evidence as to the presence of Indians from the Lemhi Agency in the vicinity of the National Park last summer, submitted with this report, may fully supply the omission referred to.

The statement of this agent that he can make a report in detail "which will not show the captain up to any advantage" obliges me to request that he be at once required to make the report to which he refers, and that such portion of it as may have personal reference to myself be transmitted to me.

With reference to Mr. Needham's visit to the Park in August, 1887, I invite attention to the statement of Lieut. G. W. Goode, First Cavalry, U. S. Army, inclosed and marked F. The register of the hotel at Mammoth Hot Springs shows that J. M. Needham, of Lemhi Agency, Idaho, arrived August 31, 1887, and departed the following day. The register of the other Park hotels are not at this time accessible, but can be referred to in the future should the necessity arise. It is certain that the agent was in the Park several days, and that he failed to make himself known to the acting superintendent of the Park. Certainly, if he was bent on pleasure, there was no reason why he should have done so, but if his business was on duty connected with the incursion of his Indians on the western border of this Park, and in accordance with the message which he states he received from the Department dated August 22, 1887, it appears, to say the least, somewhat singular that he should not have considered it worth his while to consult in any way with the officer charged with the care of the Park.

But I have no desire to dwell on the personal features of this controversy further than may be necessary to justify fully the statements contained in my letter which have been pronounced false, and which, as before explained, were made for the sole object of suggesting such instructions from the Indian Bureau to its agents as would more effectually meet the requirements of the situation.

This subject has a significance far beyond any personal considerations. The summer raids of these Indians into the regions adjacent to the Park are an unmitigated evil. Destructive forest fires invariably follow in their track, which is the result of the traditional custom which incites these Indians to fire the grass at the close of every summer. The wasteful and improvident methods employed by them in their

hunting operations, and the large number of game animals killed in their protracted hunts of several months' duration, is such a drain upon the protected game of the Park as to tend, in a large measure, to defeat all the efforts which are being made for its protection.

The overflow of the Park game into the adjacent regions renders the vicinity of the Park a favorite hunting ground, not only for these Indians, but for gentlemen sportsmen from all parts of the world. As long as the restrictive laws of the surrounding Territories are observed the Park suffers but little detriment; but these Indians have no knowledge of the law, and submit to no restrictions; and it is believed that a single one of these hunting parties works more destruction during a summer's hunt than all of the gentlemen sportsmen put together who annually visit this region.

In conclusion, I most earnestly urge that this subject may continue to receive the attention of the Department until some method shall be found which will be effective for the correction of the evils which I have endeavored to set forth.

I am, sir, very very respectfully, your obedient servant,

MOSES HARRIS,

Captain First Cavalry, Acting Superintendent Yellowstone National Park.

A true copy.

WILLIAM CANNON RIVERS,

Second Lieutenant First Cavalry, Post Adjutant.

Hon. H. L. MULDROW,

First Assistant Secretary of the Interior.

EXHIBIT A.—*Affidavit of Elwood Hofer.*

COUNTY OF PARK, *Territory of Montana:*

Personally appeared before me, R. T. Smith, a notary public, one Elwood Hofer, who, being duly sworn according to law, deposes and says: That for the past ten years he has been engaged in the business of outfitting hunting and tourist parties, at and in the vicinity of the Yellowstone National Park; that he is well acquainted with the country surrounding said Park, and the boundaries of the same as far as determined; that during the month of August, 1888, he was in the region of country immediately south of the Yellowstone Park, in company with Mr. W. Hallett Phillips, of Washington, D. C., and that while in camp on Pacific Creek, some Indians came into his camp and stated that fourteen lodges of Bannock Indians were then in camp on the same creek, about ten miles south of the park line, and engaged in hunting in a direction toward the National Park; and that subsequently, during the month of September, 1888, he being then in company with Mr. Lewis A. Eldridge, of Brooklyn, New York, he visited the locality where these Indians had been in camp and saw by the remains of camp fires and other evidences that a large number of Indians had been in camp at that place, and had been engaged in drying meat. And further, that about the 24th of October, 1888, he was with the before-named Mr. Lewis A. Eldridge, on Snake River, about nine miles south of the southern boundary of the Yellowstone National Park, and at that place he found a camp of Bannock Indians consisting of seven lodges, numbering probably fifty people; that these Indians stated that they were from the Fort Hall and Lemhi agencies, and that they were then about to return to their agencies, having had a successful hunt; that they had a large quantity of dried meat and hides in their possession; and that upon the following day they started upon their return with a large number of animals packed with dried meat, going toward the southwest corner of the Yellowstone National Park, saying that they were going to hunt on Fall River which is within the park limits.

The deponent further swears that at this time a forest fire was raging in the county immediately south of the Park line, which had destroyed the forest over an extent of many miles, and that in his opinion this fire had been started by Indian hunting parties for the purpose of facilitating their hunting operations, or through the careless use of fire.

And further the deponent sayeth not.

ELWOOD HOFER.

Subscribed and sworn to before me this 2d day of February, 1889.

[SEAL.]

R. T. SMITH,
Notary Public.

EXHIBIT B.—*Affidavit of James J. Pearson.*COUNTY OF PARK, *Territory of Montana*:

Personally appeared before me, R. T. Smith, a notary public in and for said county, one James J. Pearson, who being duly sworn according to law, deposes and says that he is a soldier in the service of the United States, stationed at Camp Sheridan, Mammoth Hot Springs, Wyoming Territory; that on or about the 13th day of August, 1888, being at that time on duty at the Grand Cañon of the Yellowstone, for the purpose of enforcing the rules and regulations of the Yellowstone National Park, he met and conversed with two Indians, a buck and a squaw, near the Grand Cañon; that these Indians said that they were Bannock Indians and that they came from Beaver Cañon, which is a station on the Utah Northern Railroad west of the Yellowstone National Park; that they were both mounted and had with them a pack animal, the buck being armed with a rifle; and further the deponent sayeth not.

JAMES J. PEARSON.

Subscribed and sworn to before me this 4th day of February, 1889.

[SEAL.]

R. T. SMITH,
Notary Public.EXHIBIT C.—*Affidavit of Edward Wilson.*COUNTY OF PARK, *Territory of Wyoming*:

Personally appeared before me, R. T. Smith, a notary public in and for said county, one Edward Wilson, who, being duly sworn according to law, deposes and says that since the month of May, 1887, he has been employed in the military service of the United States as a scout and guide for the protection of the Yellowstone National Park, and that for several years previous he had been employed under the Department of the Interior as a gamekeeper and assistant superintendent in the Yellowstone National Park; that he is well acquainted with all of the region of country adjacent to the said park and with the boundaries of the same as far as determined.

The deponent further swears that, on or about the 7th day of September, 1888, he was in company with Saddler Joseph M. Laynes, Troop M, First United States Cavalry, on Snake River, Wyoming Territory, about four miles south of the Park line, and at that point he saw a camp of Indians, consisting of three lodges and numbering, as estimated, about twenty-five people, men, women, and children; that these Indians stated that they were Bannock Indians from Salmon City, and that there were four lodges of Bannock Indians from Fort Hall, about two and one-half miles further down on the west side of the river; that he went near enough to the last-named camp to see the lodges, but did not enter it; that these Indians had large quantities of elk-meat in their camp, and stated that they had been in that vicinity about ten days, and were engaged in hunting; that at this time two large forest fires were raging in the adjacent country, one some distance south of the camp of these Indians and one to the north and west of their camp, near the edge of the park; and that, from his knowledge of the habits of these Indians, he thinks it probable that these fires were either intentionally started by them or that they originated through their careless use of fire; and further the deponent sayeth not.

EDWARD WILSON.

Subscribed and sworn to before me this 4th day of February, 1889.

[SEAL.]

R. T. SMITH,
Notary Public.EXHIBIT D.—*Affidavit of Joseph M. Loyns.*COUNTY OF PARK, *Territory of Montana*:

Personally appeared before me, R. T. Smith, notary public in and for said county, one Joseph M. Loyns, who, being duly sworn according to law, deposes and says that he is a soldier in the service of the United States, holding the rank of saddler, in Troop M, First Cavalry, stationed at Camp Sheridan, Mammoth Hot Springs, Wyoming Territory; and that on or about the 7th day of September, 1888, he then being on a scout for the purpose of enforcing the rules and regulations of the Yellowstone National Park, in company with Mr. Edward Wilson, a scout and guide in the employ of the Government, found a party of Indians in camp on Snake River, in Wyoming Territory, the party being divided into two bands, one, of three lodges, being camped on

the east bank of the river, about four miles south of the Yellowstone Park, and the other, of four lodges, some two miles or more down the river, on the opposite bank; that these Indians said that they were Bannocks, from Lemhi and Fort Hall, and that they had been in that vicinity ten days; that they stated that they were engaged in hunting, and that he saw a large quantity of elk meat in their camp.

The deponent further swears that at this time two forest fires were raging in the vicinity of these Indian camps, one very large one some distance to the south, and one less extensive to the north and west and near the south line of the Park; and further the deponent sayeth not.

JOSEPH M. LOYNS.

Subscribed and sworn to before me this 6th day of February, 1889.

[SEAL.]

R. T. SMITH,
Notary Public.

EXHIBIT E.—*Affidavit of Charles H. Stuart.*

COUNTY OF PARK, *Territory of Montana:*

Personally appeared before me, R. T. Smith, notary public in and for said county, one Charles H. Stuart, who being duly sworn according to law, deposes and says that he is a resident of Mammoth Hot Spring, Wyoming Territory, and that he is associated with the leasees Helen L. and Walter J. Henderson of that place in the Yellowstone National Park, in the business of hotel keeping and the outfitting of tourist and hunting parties; that he was for several years employed with the division of the U. S. Geological Survey in the Yellowstone National Park under Mr. Arnold Hague, and that he is well acquainted with the country in and adjacent to the Yellowstone National Park, and the boundaries of said Park as far as they are determined; that on or about the 15th day of September, 1888, being at the time in company with Mr. Frank C. Crocker, of Portland, Maine, he saw a party of Indians in camp on Snake River, there being two separate camps. One of these lodges on the east bank of the river about four miles from the Park line, and one of four lodges farther down the river on the opposite bank; that he camped near these Indians and conversed with them both in their camps and in his own; that they stated that they were Bannocks and that one band was from Fort Hall and that the other was from Salmon City, and that they were engaged in hunting on Huckleberry Mountain which is near the Park line; that in conversation they stated that they had been instructed not to go near the Park, and asked where the Park line was; and that upon being told expressed surprise that it was so near to them; that he saw a large quantity of elk meat and some hides in their camps. The deponent further swears that at this time two forest fires were raging in this vicinity. One in the country south of the Indian camps and one to the west near the south line of the Yellowstone National Park; and further the deponent sayeth not.

CHARLES H. STUART.

Subscribed and sworn to before me this 5th day of February, 1889.

[SEAL.]

R. T. SMITH,
Notary Public.

EXHIBIT F.—*Statement of Lieut. G. W. Goode, First Cavalry, U. S. Army*

About the 21st of August, 1887, under orders from Capt. Moses Harris, First Cavalry, commanding Camp Sheridan, Wyoming, I made a reconnaissance of the country just outlying the Yellowstone Park, at the northern portion of the western boundary. In accordance with my instructions, the object of this scout was to discover the presence of hunting parties of Indians (Bannock), reported to have been seen in that locality, or en route there, and return them to their reservation. After three days I found the party from the Lemhi Agency encamped about three or four miles from the western boundary line, near the headwaters of the Gallatin River.

They had been one day in camp and had killed quite a number of elk. With good rifles and ammunition, over a hundred fine looking ponies; within such easy access of the Park—and judging from the amount of elk meat already in camp—their facilities for slaughtering game within the Park limits seemed the best possible.

I ordered these Indians back to their reservation, and told them they would not be allowed to hunt in the vicinity of the Park. They promised to return, and started the following morning; in the morning I also started back to the Lower Basin to report my action to Captain Harris. I had no confidence, however, that these Indians would return to the reservation; believing that they would only change the locality of their

camp, and continue to hunt in the vicinity of the Park line, where on one side or the other, they were certain to find abundance of game.

On my way back to the lower basin, I passed on the road a man traveling in a covered wagon; he hailed me, said he was the agent at the Lemhi Agency, and asked if I had seen any of his Indians hunting in that locality. He also said he had made inquiry of some men living on the road, at Henry's Lake, and could get no information.

I told him that I had been sent out by Captain Harris to intercept Indians who were coming to hunt in the park, and I found a party of about fourteen (bucks and squaws) just outside of the park limits; that they had killed quite a number of elk; and that, although they had promised to return at once to the agency, I believed they had no such intention, but would continue to hunt in the vicinity, and would in all probability go into the park, where the elk were most plentiful.

In answer to his inquiries, I gave him directions for finding these Indians, telling him it would be necessary to proceed most of the way mounted, but the trail was fresh and very plain. He said he was unaccustomed to riding and could not possibly make such a journey; that a ride of 10 miles (I think that is the distance) would wear him out completely. He said he would proceed on to the hotel and confer with Captain Harris.

At the hotel, Lower Basin, I reported by telephone to Captain Harris, relating all the circumstances, as nearly as possible over a badly working wire, and he ordered me to return to the post.

Whether or not this agent communicated with Captain Harris from the Lower Basin, I do not know. I got the impression that he was not at all concerned about his Indians. At that time, and subsequently, he appeared to me like a tourist and pleasure-seeker, but not like a government official in the discharge of his duties.

According to my recollection this man made the regular tour of the Park, and took his departure thence without having spoken to Captain Harris of the business which was the ostensible cause of his presence there. I can not assert this positively at the present time, but I do remember distinctly that his conduct was discussed; and that Captain Harris and myself both pronounced him guilty of neglect of duty, because he had made no effort, and shown no desire, to control the actions of these Indians for whom he was responsible.

GEO. W. GOODE,
Second Lieutenant, First Cavalry.

FORT MAGINNIS, MONT.,
February 5, 1889.

SUPPLEMENTAL REPORT
OF THE
SUPERINTENDENT OF THE YELLOWSTONE NATIONAL PARK.

The Hon. SECRETARY OF THE INTERIOR,
Washington, D. C.:

Having assumed the duties of Superintendent of the Yellowstone National Park only one month ago, my report for a part of the fiscal year ending June 30, 1889, will naturally be very brief.

I have been favored by Capt. Moses Harris, First Cavalry, my predecessor, with a perusal of his report closing his administration of affairs of the Park May 31, 1889. It will be found very comprehensive and interesting. His management has left matters in the Park in so healthy a condition that little trouble is apprehended in its government.

I have not had an opportunity for making a thorough inspection of the Park, but while making a tour with Senators Hoar, Allison, Hale, Pugh, and Dolph I was impressed with the danger that exists of its utter ruin as a Park by forest fires. There is no equipment for fighting fires, and I am sure that without proper appliances a fire well under way in any part of the Park would be uncontrollable, and, besides destroying its beauty, would be of incalculable injury to the countries receiving their water supply from this great reservoir.

A great deal of damage has already been done to the Park by fires, but there are still thousands of acres of dense, low-grade pine timber which protects the snow from the sun's rays, and retards the melting until late in the season. A rapid melting of the snows of this region would certainly be attended by freshets on both sides of the continental divide. The unruly character of Snake and Missouri Rivers in high water are too well known to deserve comment.

If this wonderland is considered worth preservation a liberal appropriation should at once be made to be used in clearing away the down timber for 100 yards on each side of the roads and trails. Many parties pass through the Park camping, and many of the fires which occur are traced to them. I do not believe they are, as a rule, willfully careless, but they often leave their fires believing them out, when in fact they are not, and the winds soon fan the embers into flames. It may become necessary to establish regular camping grounds, at intervals of a few miles, when the camps can be examined every morning by persons charged with the duty, and all remaining fires extinguished. As fires often occur at a distance from water, there should be supplied two or more water wagons, drawn by four mules, a number of folding rubber buckets, axes, and shovels. The rubber buckets could be carried on horses. The tanks could be filled at the nearest streams and hauled to the fires. It very often happens that fires get into the dead roots of

trees, where they can not be reached by shovels and axes, and such fires have to be watched for days, or until they are burned out, while a few buckets of water would put them out at once.

Except at the Mammoth Hot Springs there are no suitable hotels in the Park. I believe the Yellowstone Park Association intend erecting good buildings as fast as possible. The work on their buildings has been greatly impeded by the regulations prohibiting the cutting of live timber in the Park. Your recently received authority for the cutting of the necessary timber for the erection of hotels will greatly facilitate matters.

The Park is so far from the supply of both labor and material that the work is slow. The breaking of a single piece of the saw-mill, for instance, or the sickness or incapacity of a workman brought out from St. Paul, will stop the work until they can be replaced.

The hotel at the Grand Cañon will be completed this season, and the one at the lake is so far under way that mechanics can work on it this winter and have it ready for next season.

That portion of the statute which prescribes that no hotel shall be erected within 440 yards of any object of interest is very embarrassing, and I think should be modified to read 220 yards. A special case in point is the hotel at Upper Geyser Basin; it is about 250 yards from "Old Faithful" geyser and is situated on the only good site for a hotel building in that basin. From its porch every active geyser in the basin can be seen. To enforce the 440-yards proviso would be to push the hotel back out of sight of many.

The work on the roads through the Park is being pushed vigorously by the engineer corps under the immediate direction of Lieut. William P. Craighill, Engineer Corps, and by the close of the season travel will be greatly improved.

There is much down timber on the trails. This, with promised assistance from the engineer party, I hope to have removed very soon.

The game seen in the Park appears so remarkably tame that I believe with time many varieties will become so gentle that they will have little greater fear of man than the animals seen in eastern parks.

With a small appropriation I believe an inclosure on the roadside could be made and stocked with elk and deer and antelope, so as to be seen by all tourists passing. The only expense attending their support would be a little hay for winter.

From what I can learn, the Park until recent years was considered by many living in the neighborhood little else than a fine hunting-ground. I think most of those who were in the habit of hunting in the Park have now a feeling of proprietary interest and recognize that the protection afforded the game makes it a safe breeding-ground, and that there will be more game in the adjacent country if the animals while in the Park are not disturbed.

The carnivora of the Park have, in common with other animals, increased until, I believe, something should be done for their extermination. This will be made the subject of a special letter. If the proposition is favorably considered the work should be done by persons under my control.

In passing through the Park I noticed with surprise the barrenness of most of the water of the Park. Besides the beautiful Shoshone and other smaller lakes there are hundreds of miles of as fine streams as any in existence without a fish of any kind. I have written Col. Marshall McDonald, U. S. Fish Commission, upon the subject, and have received letters from him manifesting a great interest. I hope through

him to see all of these waters so stocked that the pleasure-seeker in the Park can enjoy fine fishing within a few rods of any hotel or camp. There are other reasons, too, to be considered in this connection. The stocking of these waters will add vastly to the breeding-grounds of the tributaries of the Missouri and Snake Rivers and add immeasurably to the food supply obtained from those waters.

The attention of the Secretary is earnestly asked to the fact that the boundary of the Park is not marked, and only known by the description contained in the statute. I believe persons have hunted and trapped within the Park, and may again do so, through ignorance of its boundaries. A survey, a small slashing through the timber, and the piling of a few rocks in the open country is all that is necessary, and should cost very little.

If the guarding of the Park is to remain a military duty it should be settled by law as soon as possible and this station recognized as a military post. It is now considered a cantonment and the troops in cantonment. The temporary buildings are insufficient and not as comfortable as at other posts. Estimates for additional quarters are disapproved upon the grounds that the station of troops in the Park is temporary.

A suitable residence for the Superintendent is necessary, and if an appropriation could be obtained for such a building it would greatly relieve the pressure now felt by officers on duty in the Park.

The most embarrassing features of Park administration appear to be the want of any law except such as is vested in the Secretary of the Interior in establishing rules and regulations.

So far as the Superintendent is concerned he can make no distinction between the offense of breaking a small piece off a formation or breaking a tourist's head, carrying away a bit of incrustation or carrying away a tourist's trunk. I know little of civil law, and have no remedy to propose. I only suggest that something should be done, leaving the system to others of experience.

I have reasons to believe that schemes are on foot looking to the cutting off of a portion of the northeastern corner of the Park. If the preservation of the game of the Park is worthy of consideration this should be strongly opposed, as some of the principal winter ranges of elk and buffalo are in the part proposed to be cut off.

Inclosed herewith is a meteorological record of the post, kept at the post hospital; also an estimate of the cost of care and preservation of the Park under civil administration for fiscal year ending June 30, 1891. It will appear large, but I am confident a lesser number of employés can not, with the probable increase of travel, perform the duties to your satisfaction.

F. A. BOUTELLE,
Captain, First Cavalry,
Acting Superintendent Yellowstone National Park.

Meteorological record kept at Mammoth Hot Springs, Yellowstone National Park, from July 1, 1888, to June 30, 1889.

[Latitude, 44° 58'; longitude, 110° 41' 8"; altitude of barometer above sea, 6,370 feet.]

JULY, 1888.

Date.	Self-registering thermometer.			Winds.		State of weather.	Remarks.
	Maximum.	Minimum.	Mean.	Direction.	Force.		
1888.	°	°	°				
July 1	71	46	58.50	S.	Fresh breeze	Fair	
2	67	41	54	W.	Gentle breeze	do	Rain during night.
3	73	49	61	SE.	Strong wind	do	
4	80	45	62.50	S.	High wind	Clear	
5	77	47	62	NW.	Light breeze	Cloudy	Rain at night, thunder and lightning during night.
6	80	47	63.50	E.	Calm	do	
7	85	51	68	W.	Light breeze	Clear	10 to 10.20 a. m. rain
8	81	54	67.50	S.	do	Fair	Thunder-storm and rain during night.
9	91	49	70	W.	Gentle breeze	Clear	
10	91	51	71	S.	Light breeze	do	
11	95	54	74.50	W.	Gentle breeze	Fair	Rain at intervals.
12	72	57	64.50	S.	Light breeze	do	Do.
13	71	41	56	SW.	Gentle breeze	Clear	
14	78	44	61	S.	do	do	
15	73	45	59	SW.	do	do	
16	73	40	56.50	NW.	Light breeze	do	
17	74	38	56	NW.	do	Entire clear	
18	86	38	62		Calm	do	
19	90	47	68.50	SW.	Gentle breeze	Clear	
20	87	53	70	NW.	do	do	
21	83	54	68.50	NW.	Light breeze	do	
22	87	47	67	NE.	do	Fair	
23	81	55	68		Calm	Cloudy	Rain in the afternoon.
24	81	48	64.50	NW.	Gentle breeze	do	
25	82	52	67	SW.	do	do	3.30 to 7.30 p. m. thunder-storm, rain and hail.
26	85	48	56.50	SW.	do	Fair	Rain; thunder-storms in the afternoon.
27	84	46	65	S.	Light breeze	do	Rain and hail; thunder-storm passed at a distance 8 p. m.
28	85	49	67	NE.	Calm	do	Thunder and lightning during night.
29	87	51	69	SW.	Light breeze	Clear	
30	80	47	63.50	N.	do	Fair	
31	66	53	59.50	NW.	do	Entire cloudy	Rain from 11.20 a. m. to 2 p. m.

Summary for the month of July, 1888.

Thunder-storms, dates of, 5th, 8th, 25th, 26th, 27th, 28th. On the 26th, 3.30 p. m., distinct peals of thunder at a distance; temperature, 85°; 4.50 p. m., thunder-storm from westerly direction approaching; wind changed from southwest; light breeze to west gale; heavy rain; strong electrical detonations and numerous lightning; thermometer fell from 76° to 56° in twenty minutes; double rainbow observed southeast; 5.50 p. m. wind changed from west gale to southeast fresh breeze, with approach of thunder-storm; heavy rain ended at 6.30 p. m.

Average cloudiness (scale of ten)	3.98
Number of days on which cloudiness averaged eight or more	2
Number of days of rain	11
Number of days of hail	1

Temperature during the month: Highest, 95°, on the 11th; lowest, 38°, on the 17th and 18th; mean, 64.07°.

Barometer during the month: Highest, 24.172 inches, on the 21st; lowest, 23.802 inches, on the 1st.

Meteorological record kept at Mammoth Hot Springs, etc.—Continued.

AUGUST, 1888.

Date.	Self-registering thermometers.			Winds.		State of weather.	Remarks.
	Maximum.	Minimum.	Mean.	Direction.	Force.		
1888.	°	°	°				
Aug. 1	79	48	63.50	S.	Gentle breeze	Cloudy	Rain; thunder-storm.
2	75	46	60.50	S.	Fresh breeze..	Fair	Do.
3	71	41	56	SW.	Light breeze..	Cloudy	Sprinkling rain.
4	64	48	56	S.	Gentle breeze	Entire cloudy.	Rain; thunder-storm.
5	64	43	53.50	NW.	do	Fair	Rain.
6	57	41	49	SE.	do	do	Rain at intervals; rainbow east 5.30 p. m.; southeast 6.30 p. m.
7	65	38	51.50	NW.	do	do	
8	78	38	58	S.	Fresh breeze..	Clear	
9	77	41	59	N.	do	Fair	Rain; thunder-storm.
10	79	43	61	W.	Gentle breeze.	Clear	Rain 1 p. m. to 1.45 p. m.
11	86	46	66	NW.	Light breeze..	do	
12	79	51	65	NW.	Gentle breeze.	Fair	
13	84	49	66.50	S.	Fresh breeze .	Clear	
14	66	53	59.50	NW.	High wind...	Cloudy	
15	63	43	53	NW.	Brisk	Fair	Rain; thunder-storm 5.30 to 6.30 p. m.
16	72	35	53.50	NW.	Light	Clear	
17	75	39	57	SE.	Fresh	Fair	Rain; thunder-storm.
18	65	46	55.50	E.	Gentle	do	Do.
19	75	41	58	NW.	do	Clear	
20	81	42	61.50	N.	Light	do	
21	84	45	64.50	N.	do	do	
22	86	45	65.50	SE.	Gentle	do	
23	84	48	66	E.	Light	do	Thunder-storm.
25	89	48	68.50	SE.	Gentle	do	
25	90	49	69.50	N.	Light	do	
26	88	51	69.50	NW.	Gentle	Fair	Sprinkling rain; thunder-storm.
27	84	53	68.50	W.	Fresh	do	Rain; thunder-storm.
28	86	47	66.50	S.	Light	Clear	
29	85	46	65.50	NW.	do	do	
30	85	43	64	NW.	Calm	do	
31	82	45	63.50	W.	do	Entire clear ..	

Summary for the month of August, 1888.

Thunder-storms, dates of: 1st, 2d, 4th, 9th, 15th, 17th, 18th, 23d, 26th, 27th.

On the 1st, 2.30 p. m., wind changed from southerly gentle to westerly gale; 3 p. m., rain, thunder-storm with loud peals of thunder; rain ended during night. On the 2d, 1.30 p. m., thunder-storm passed at a distance; wind changed from southerly to southwesterly brisk; thunder-storm approaching from southwest accompanied by a heavy shower of rain; 4.56 p. m. wind changed from southwesterly to northwesterly high; thunder-storm with strong electrical detonations and numerous lightning. Heavy shower of rain; thermometer fell rapidly from 64° to 52°. On the 4th, thunder-storm passed at a distance from west to east; heavy shower of rain. On the 9th, thunder-storm passed at a distance from southwest to east. On the 15th, thunder-storm from southwest in easterly direction at a distance between 1 and 2 p. m. On the 17th, thunder-storm from west to northeast at a distance. On the 27th thunder-storm at a distance in easterly direction with numerous lightning.

Average cloudiness (scale of ten) 3.91
 Number of days of rain and hail 11

Temperature during the month: Highest, 90°, on the 25th; lowest, 38°, on the 7th; mean, 59°.19.

Barometer during the month: Highest, 24.130 inches, on the 11th; lowest 23.826 inches, on the 4th.

Meteorological record kept at Mammoth Hot Springs, etc.—Continued.

SEPTEMBER, 1888.

Date.	Self-registering thermometers.			Winds.		State of weather.	Remarks.
	Maximum.	Minimum.	Mean.	Direction.	Force.		
1888.	°	°	°				
Sept. 1	82	43	62.50	NW.	Gentle	Entire clear ..	Sprinkling rain; thunder-storm passed at a distance from west to east.
2	83	41	62	NW.	.. do	Clear	
3	82	44	63	NE.	Light	Fair	
4	86	46	66	NW.	Brisk	.. do	
5	74	51	62.50	S.	High	.. do	
6	71	37	54	S.	Gentle	Clear	Sprinkling rain.
7	79	39	59	N.	.. do	Entire clear ..	
8	84	40	62	SE.	Light	.. do	
9	81	47	64	SW.	Brisk	Clear	
10	74	42	58	NW.	.. do	.. do	
11	82	37	59.50	NE.	Calm	Entire clear ..	Rain at intervals.
12	85	43	64	S.	High	Clear	
13	78	54	66	S.	Light	.. do	
14	75	33	54	NW.	Fresh	Entire clear ..	
15	85	34	59.50	SE.	Calm	Clear	
16	85	40	62.50	S.	Light	.. do	Rain.
17	83	47	65	S.	Fresh	.. do	
18	60	50	55	S.	Light	Cloudy	
19	67	43	55	NW.	.. do	Fair	
20	72	38	55	S.	.. do	Clear	
21	76	43	59.50	S.	Gentle	.. do	Sprinkling rain.
22	77	40	58.50	SE.	Calm	.. do	
23	78	38	58	NW.	Fresh	Clear	
24	70	35	52.50	NW.	Brisk	Entire clear ..	
25	77	33	55	NW.	Gentle	.. do	
26	68	35	51.50	NW.	Brisk	Clear	Sprinkling rain.
27	72	34	53	NW.	Calm	.. do	
28	69	35	52	NW.	Fresh	Entire clear ..	
29	72	34	53	NW.	Light	Clear	
30	74	40	57	NW.	Fresh	.. do	

Summary for the month of September.

Average cloudiness (scale of ten) 1.62
 Number of days of rain 5

Temperature during the month: Highest, 86°, on the 4th; lowest, 33°, on the 14th and 25th; mean, 57.83.

Highest barometer, 24.212 inches, on the 24th; lowest barometer, 23.772 inches, on the 18th.

Meteorological record kept at Mammoth, Hot Springs, etc.—Continued.

OCTOBER, 1888.

Date.	Self-registering thermometers.			Winds.		State of weather.	Remarks.
	Maximum.	Minimum.	Mean.	Direction.	Force.		
1888.	°	°	°				
Oct. 1	74	38	56	NW.	Light	Clear	
2	73	35	54	NW.	Gentle	do	
3	69	33	51	NW.	Brisk	Fair	Rain during night.
4	64	41	52.50	NW.	Gentle	do	
5	63	30	46.50	N.	Light	Entire clear	
6	68	30	48	N.	Calm	do	
7	62	28	45	SW.	Gale	Fair	Rain, hail; thunder-storm; at a distance 4.45 p. m to 8.30 p. m.
8	52	38	45	S.	Fresh	do	Rain; afternoon.
9	56	35	45.50	N.	Brisk	Clear	
10	56	27	41.50	SW.	Gentle	Cloudy	
11	52	42	47	SW.	do	do	Rain; double rainbow east at 5 p. m.
12	62	39	50.50	S.	Light	do	
13	51	39	45	W.	Fresh	Fair	
14	49	28	38.50	S.	Brisk	Cloudy	Sprinkling rain and hail.
15	51	38	44.50	S.	do	Entire cloudy	Snow at intervals.
16	58	34	46	S.	Gentle	Cloudy	
17	54	33	43.50	SE.	Light	Fair	Rain; thunder-storm from westerly direction.
18	41	24	32.50	NW.	Fresh	Clear	Snow.
19	57	21	38	S.	Light	Fair	
20	46	31	38.50	NW.	Brisk	Clear	
21	42	23	32.50	NW.	Fresh	Cloudy	Snow at intervals.
22	48	27	37.50	SW.	Gentle	Entire cloudy	Snow.
23	47	34	40.50	S.	Gale	do	Do.
24	48	31	39.50	S.	Fresh	Cloudy	Snow at intervals.
25	36	24	30	S.	High	do	Snow.
26	35	22	28.50	N.	Calm	Fair	Do.
27	37	13	25	S.	Gentle	do	
28	53	31	42	S.	Brisk	do	
29	62	37	49.50	SE.	Fresh	do	
30	56	34	45	S.	High	Entire cloudy	Rain.
31	41	30	35.50	.....	Calm	do	Snow.

Summary for the month of October.

Thunder-storms, dates of: 7th, 17th.

Average cloudiness (scale of ten)	5.44
Number of days of rain and hail	7
Number of days of snow	1

The snow-fall was inappreciable on 8 days. Depth of snow-fall during the month, 2.7 inches.

Temperature during the month: Highest, 74°, on the 1st; lowest, 13°, on the 27th; mean, 40.97.

Barometer during the month: Highest barometer, 23.978 inches, on the 10th; lowest barometer, 23.420 inches, on the 25th.

Meteorological record kept at Mammoth Hot Springs, etc.—Continued.

NOVEMBER, 1888.

Date.	Self-registering thermometers.			Winds.		State of weather.	Remarks.
	Maximum.	Minimum.	Mean.	Direction.	Force.		
1888.	°	°	°				
Nov. 1	34	20	27	SE.	Brisk	Cloudy	Snow at intervals.
2	39	28	33.50	SE.	High	Entire cloudy.	Snow at intervals; rain in the afternoon.
3	41	30	35.50	NW.	do	do	Snow.
4	36	23	29.50	SE.	Calm	Fair	
5	30	13	21.50	S.	Fresh	do	Snow at night.
6	34	20	27	S.	High	Cloudy	Snow at intervals
7	33	20	26.50	NW.	Gentle	Fair	Do.
8	32	10	21		Calm	Clear	
9	38	17	27.50	S.	Gentle	do	
10	39	13	26	SE.	Light	do	
11	42	17	29.50	SE.	do	do	
12	42	22	32	S.	Brisk	Fair	
13	38	25	31.50	S.	Light	Entire cloudy.	Snow.
14	27	13	20		do	do	Do.
15	17	-4	6.50		Calm	Entire clear ..	
16	17	-4	6.50		do	Fair	
17	36	17	26.50	SE.	Light	Cloudy	Do.
18	42	22	32		Calm	Clear	
19	44	23	33.50		do	do	
20	36	25	30.50	SE.	Gentle	Fair	
21	38	20	29		Light	Clear	
22	39	22	30.50	SE.	do	Cloudy	
23	43	28	35.50	SE.	do	Fair	
24	43	18	30.50	SE.	Calm	Entire clear ..	
25	43	24	33.50	SE.	Light	Fair	
26	38	31	34.50	NW.	Calm	Entire cloudy.	Do.
27	36	22	29	NW.	Brisk	Fair	Snow forenoon.
28	29	11	20		Calm	do	
29	28	1	14.50		do	Clear	
30	31	10	20.50	SE.	Light	do	

Summary for the month of November.

Average cloudiness (scale of ten)..... 4.83
 Number of days of rain..... 1
 Number of days of snow..... 11

Snow-fall on three days inappreciable; depth of snow-fall during the month, 10.8 inches.

Temperature during the month: Highest, 44°, on the 19th; lowest, -4°, on the 15th and 16th; mean temperature, 25°.45.

Barometer during the month: Highest, 24.032, on the 19th; lowest, 23.526, on the 6th.

Meteorological record kept at Mammoth Hot Springs, etc.—Continued.

DECEMBER, 1888.

Day of month.	Temperature.			Precipitation.				General direction of the wind.
	Maximum.	Minimum.	Range.	Time of beginning.	Time of ending.	Total precipitation.*	Depth of snow-fall.	
1888.	°	°	°			<i>Inches.</i>	<i>Inches.</i>	
Dec. 1	32	18	14	6.30 a. m.....	During night.	.19	2.10	W.
2	32	13	19	.....	.....	.....	.....	S.
3	38	17	21	.....	.....	.....	.....	S.
4	46	29	17	.....	.....	.....	.....	S.
5	43	16	27	.....	.....	.....	.....	SW.
6	40	21	19	.....	.....	.....	.....	S.
7	39	21	18	.....	.....	.....	.....	SE.
8	40	26	14	7.15 a. m.....	8.45 a. m.....	.01	0.15	S.
9	39	31	8	.....	.....	.....	.....	S.
10	35	23	12	12.30 p. m.....	8.15 p. m.....	.06	0.60	SE.
11	35	22	13	6.30 a. m.....	9.30 a. m.....	.05	0.55	S.
12	40	27	13	During night.	11 a. m.....	.10	1.05	SE.
13	39	19	20	.....	.....	.....	.....	S.
14	36	24	12	7.30 a. m.....	.....	.20	2.10	SE.
15	36	24	12	.....	.....	.45	4.05	S.
16	34	22	12	.....	During night.	.25	2.60	S.
17	34	17	17	.....	.....	.....	.....	SE.
18	27	14	13	.....	.....	.....	.....	SE.
19	40	13	27	.....	.....	.....	.....	S.
20	38	15	23	.....	.....	.....	.....	S.
21	42	18	24	.....	.....	.....	.....	S.
22	39	23	16	9.30 a. m; 5 p. m.	3 p. m.; during night.	.05; rain in-appreciable.	0.70	N.
23	35	16	19	9.30 a. m.....	.....	.15	1.15	S.
24	18	1	17	.....	1.30 p. m.....	.06	0.80	S.
25	6	-11	17	.....	.....	.....	.....	SE.
26	8	-13	21	.....	.....	.....	.....	S.
27	11	-9	20	.....	.....	.....	.....	SE.
28	16	-6	22	.....	.....	.....	.....	S.
29	16	-3	19	.....	.....	.....	.....	SE.
30	14	-6	20	.....	.....	.....	.....	S.
31	26	-3	29	.....	.....	.....	.....	SE.

* Total precipitation, rain, melted snow, and hail.

Summary for the month of December.

Average cloudiness (scale of ten).....	4.27
Number of days of rain.....	1
Number of days of snow.....	11
Depth of snow-fall during the month.....	inches.. 15.85
Total precipitation.....	do.... 1.57

Temperature during the month: Highest, 46°, on the 4th; lowest, -13°, on the 26th; mean, 22°.1.

Meteorological record kept at Mammoth Hot Springs, etc.—Continued.

JANUARY, 1889.

Day of month.	Temperature.			Precipitation.				General direction of the wind.
	Maximum.	Minimum.	Range.	Time of beginning.	Time of ending.	Total precipitation.	Depth of snow fall.	
1889.		°	°			<i>Inch.</i>	<i>Inches.</i>	
Jan. 1	20	1	19	.....	.....	.....	.....	
2	20	-3	23	.....	.....	.....	.....	
3	21	-4	25	.....	.....	.....	.....	
4	30	10	20	.....	.....	.....	.....	S.
5	33	11	22	.....	.....	.....	.....	S.
6	29	20	9	.....	.....	.....	.....	S.
7	26	10	16	.....	.....	.....	.....	W.
8	15	-7	22	.....	.....	.....	.....	
9	25	5	20	During night..	11 a. m	0.15	2.25	SE.
10	23	12	11	1.10 p. m	During night .	0.2	1.75	S.
11	31	16	15	10.30 a. m	11.20 a. m	Inappreciable.	Inappreciable.	NW.
12	25	10	15	.....	.....	.....	.....	E.
13	18	2	16	During night.	7.20 p. m	0.45	4	
14	12	-5	17	.....	.....	.....	.....	
15	13	-4	17	7.30 a. m	6.10 p. m	0.2	2	S.
16	16	2	14	.....	.....	.....	.....	SE.
17	16	6	10	.....	.....	.....	.....	SE.
18	18	3	15	.....	.....	.....	.....	SE.
19	21	3	18	.....	.....	.....	.....	S.
20	23	11	12	.....	.....	.....	.....	SE.
21	24	9	15	.....	.....	.....	.....	SW.
22	22	2	20	11. . . . .	.....	.....	.....	NW.
23	38	16	22	11.30 a. m	12.10 p. m	0.05	0.4	SE.
24	38	16	22	.....	.....	.....	.....	W.
25	31	11	20	.....	.....	.....	.....	NW.
26	24	-2	26	.....	.....	.....	.....	SW.
27	30	7	23	.....	.....	.....	.....	
28	33	10	23	.....	.....	.....	.....	SE.
29	35	7	28	.....	.....	.....	.....	SE.
30	31	3	28	.....	.....	.....	.....	
31	29	6	23	.....	.....	.....	.....	SW.

Summary for the month of January.

Number of days of snow..... 6
 Total precipitation..... inches.. 1.05
 Depth of snow-fall..... do.... 9.04

Temperature during month: highest, 38°, on the 24th; lowest, -7°, on the 8th; mean, 14° 7;
 mean range, 24° 9.

Meteorological record kept at Mammoth Hot Springs, etc.—Continued.

FEBRUARY, 1889.

Day of month.	Temperature.			Precipitation.				General direction of the wind.
	Maximum.	Minimum.	Range.	Time of beginning.	Time of ending.	Total precipitation.	Depth of snow-fall.	
1889.	°	°	°			<i>Inch.</i>	<i>Inches.</i>	
Feb. 1	29	15	14					S.
2	31	17	14	8.50 a. m.	11 a. m.		Inappreciable.	S.
3	36	16	20					S.
4	38	18	20					SW.
5	36	11	25					S.
6	37	9	28					SE.
7	33	10	23	2.50 p. m.	3.35 p. m.		Inappreciable.	SE.
8	30	11	19					SE.
9	23	13	10	8.50 a. m.	5.50 p. m.	0.15	1.6	
10	29	16	13	8.35 a. m.	3 p. m.	0.05	0.5	
11	35	22	13	During night	10.30 a. m.	0.3	3.2	NW.
12	34	19	15	7.25 a. m.	4.30 p. m.	0.2	0.7	SE.
13	32	19	13	6.30 a. m.		0.6	5.9	NW.
14	19	7	12		8.30 a. m.	0.22	2	NW.
15	10	— 9	19	9.50 a. m.	10.30 a. m.		Inappreciable.	NW.
16	4	—15	19	3.55 p. m.	4.20 p. m.		do.	
17	12	—13	25					SE.
18	16	— 2	18	2.45 p. m.	During night	0.1	0.8	SE.
19	17	— 6	23				Inappreciable.	S.
20	20	3	17	9.30 a. m.	4.20 p. m.	0.2	1.9	SE.
21	31	19	12	7.35 a. m.	5.55 p. m.	0.06	0.5	SW.
22	32	— 8	40	During night.	During night.		Inappreciable.	N.
23	37	—11	48	12.30 p. m.	5.35 p. m.		do.	S.
24	36	17	19	During night	During night.	0.05	0.4	
25	40	17	23	11.50 a. m.	12.35 p. m.		Inappreciable.	S.
26	42	24	18					SW.
27	45	19	26					S.
28	47	23	24					

Summary for the month of February.

Number of days of snow..... 18
 Total precipitation..... inches.. 1.93
 Depth of snow-fall..... do.... 17.5

Temperature during the month: highest, 47°, on the 28th; lowest, —15°, on the 16th; mean, 19.5°; mean range, 20.36°.

Meteorological record kept at Mammoth Hot Springs, etc.—Continued.

MARCH, 1889.

Day of month.	Temperature.			Precipitation.				General direction of the wind.
	Maximum.	Minimum.	Range.	Time of beginning.	Time of ending.	Total precipitation.	Depth of snow-fall.	
1889.	°	°	°			<i>Inch.</i>	<i>Inch.</i>	
Mar. 1	47	12	35					
2	46	14	32					
3	42	15	27					SE.
4	46	13	33					SE.
5	53	16	37					
6	54	20	34					
7	49	20	29					
8	45	19	26					N.
9	49	19	30					SW.
10	49	28	21	During night	During night	0.05	0.6	E.
11	48	25	23	5.20 p. m.	6.25 p. m.	0.03		N.
12	45	30	15	3.50 p. m.	During night	0.04		S.
13	45	30	15	7.25 a. m.	8.45 a. m.	Sprinkling		S.
14	48	22	26	5.25 p. m.	8 p. m.	0.05		S.
15	43	33	10	3.20 p. m.	5.15 p. m.	0.04	Melted as it fell	S.
16	50	30	20	4.35 p. m.	5.10 p. m.		Inappreciable.	SE.
17	43	30	13	7.25 a. m.	7.50 a. m.		do	S.
18	46	35	11	4.35 p. m.	5.15 p. m.	Inappreciable		S.
19	39	29	10					NW.
20	44	17	27	During night	7.45 a. m.	0.06	0.9	SE.
				12.05 p. m.	5.30 p. m.			
21	44	16	28					NW.
22	52	18	34					SE.
23	54	23	31					S.
24	54	23	31					NW.
25	52	33	19					NW.
26	55	26	29					S.
27	57	28	29					S.
28	56	32	24					NW.
29	55	31	24					S.
30	42	29	13	2.40 p. m.	3.50 p. m.	0.04		NW.
				6.10 p. m.	During night			
31	43	29	14	12.45 p. m.	1.40 p. m.	0.22	0.3	S.
				4.30 p. m.	5.15 p. m.			

Summary for the month of March.

Number of days of snow..... 6
 Number of days of rain..... 6
 Total precipitation..... inches.. 0.53
 Depth of snow-fall..... do.... 1.8

Temperature during the month: Highest, 57°, on the 27th; lowest, 12°, on the 1st; mean, 36°.13
 mean range, 24°.19.

Meteorological record kept at Mammoth Hot Springs, etc.—Continued.

APRIL, 1889.

Day of month.	Temperature.			Precipitation.				General direction of the wind.
	Maximum.	Minimum.	Range.	Time of beginning.	Time of ending.	Total precipitation.	Depth of snow-fall.	
1889.	°	°	°			<i>Inch.</i>	<i>Inches.</i>	
Apr. 1	58	39	19	8.50 p. m.	During night.	0.03	.....	S.
2	55	40	15	.....	.....	.....	.....	NW.
3	60	26	34	.....	.....	.....	.....	S.
4	69	33	36	.....	.....	.....	.....	SW.
5	49	35	14	11.15 a. m.	2.45 p. m.	0.09	.....	S.
				8.40 p. m.	During night		.....	
6	50	33	17	.....	.....	0.02	.....	NW.
7	56	32	24	.....	.....	.....	.....	NW.
8	53	25	28	.....	.....	.....	.....	N.
9	55	25	30	.....	.....	.....	.....	NW.
10	57	25	32	.....	.....	.....	.....	NW.
11	61	26	35	.....	.....	.....	.....	NE.
12	55	34	21	.....	.....	.....	.....	SE.
13	49	36	13	During night } 12.30 p. m.	7.25 a. m.	0.1	.....	SE.
14	47	25	22	6.10 p. m.	8.25 a. m.	0.29	2.2	SE.
				.....	During night			
15	43	26	17	1 p. m.	5.15 p. m.	0.04	0.2	NW.
16	43	25	18	During night.	During night.	0.01	0.3	S.
17	40	29	11	do	10.05 a. m.	0.1	0.7	NW.
18	46	19	27	.....	.....	.....	.....	E.
19	52	28	24	.....	.....	.....	.....	S.
20	64	34	30	.....	.....	.....	.....	S.
21	63	34	29	.....	.....	.....	.....	S.
22	57	38	19	12.25 p. m.	5.15 p. m.	.18	.....	W.
				6.45 p. m.	During night			
23	56	32	30	.....	.....	.05	.3	N.
24	62	32	30	11.50 a. m.	2.25 p. m.	Inappreciable.	.....	S.
25	63	42	21	.....	.....	.....	.....	NW.
26	64	29	35	.....	.....	.....	.....	S.
27	64	31	33	.....	.....	.....	.....	S.
28	54	34	20	During night.	.....	.....	.....	NW.
29	49	29	20	.....	7.30 a. m.	0.1	.1	NW.
30	51	29	22	2.15 p. m.	2.30 p. m.	Sprinkling.	.....	NW.

Summary for the month of April.

Number of days of snow..... 6
 Number of days of rain 7
 Total precipitation..... inches.. 0.92
 Depth of snow-fall..... do.... 3.8

Temperature during month: Highest, 69°, on the 4th; lowest, 19°, on the 18th; mean, 42°.83; mean range, 24°.

Meteorological record kept at Mammoth Hot Springs, etc.—Continued.

MAY, 1889.

Day of month.	Temperature.			Precipitation.				General direction of the wind.
	Maximum.	Minimum.	Range.	Time of beginning.	Time of ending.	Total precipitation.	Depth of snow-fall.	
1889.	°	°	°			<i>Inches.</i>	<i>Inches.</i>	
May 1	54	26	28					NW.
2	63	27	36	During night				SE.
3	54	37	17		8.50 a. m.	.04		S.
4	44	33	11	7.35 a. m.	7.15 p. m.	.33	.2	S.
5	51	33	18	During night	12.15 p. m.	.08	.1	S.
6	49	33	16	At intervals	At intervals	.07	.1	SE.
7	43	31	12	8.30 a. m.	11.10 a. m.	.02		NW.
8	43	31	12	3 p. m.	4.55 p. m.	.03		NW.
9	45	32	13	During night	9.40 a. m.	.11		NW.
10	56	32	24					NW.
11	61	29	32					NW.
12	68	31	37					S.
13	69	40	29	4.15 p. m.	6.20 p. m.	.03		SE.
14	57	39	18	During night	6.15 a. m.	.15		NW.
15	43	30	13	9.35 a. m.		.07	.1	N.
16	41	26	15		During night	.05	.2	NW.
17	49	21	28	8.25 p. m.				S.
18	53	32	21		During night	.04		SE.
19	60	30	30					NW.
20	70	31	39					S.
21	77	41	36					S.
22	72	38	34					S.
23	64	37	27					NW.
24	65	40	25					NW.
25	70	38	32					NW.
26	74	37	37					SE.
27	64	46	18	10.35 a. m.	3.10 p. m.	.15		SE.
28	63	42	21	During night	During night	.06		NW.
29	77	41	36					S.
30	70	49	21	During night	During night	.17		SW.
31	65	34	31	12.35 p. m.	3.10 p. m.			S.

Summary for the month of May.

Number of days of snow 5
 Number of days of rain 10
 Total precipitation inches.. 1.40
 Depth of snow-fall inch.. .7

Temperature during month: Highest, 77°, on the 21st; lowest, 21°, on the 17th; mean, 46°.79;
 mean range, 24°.74.

Meteorological record kept at Mammoth Hot Springs, etc.—Continued.

JUNE, 1889.

Day of month.	Temperature.			Precipitation.				General direction of the wind.
	Maximum.	Minimum.	Range.	Time of beginning.	Time of ending.	Total precipitation.	Depth of snow-fall.	
1889.	°	°	°			<i>Inches.</i>	<i>Inches.</i>	
June 1	59	38	21	.....	.....	.....	.....	S.
2	65	33	32	.....	.....	.....	.....	NW.
3	65	36	29	.....	.....	.....	.....	NW.
4	80	38	42	.....	.....	.....	.....	E.
5	74	48	26	1.15 p. m	3.50 p. m	.22	.....	SE.
6	70	42	28	During night	During night	.01	.....	S.
7	68	45	23	4.35 p. m	4.50 p. m	Inappreciable.	.....	NW.
8	50	34	16	7.30 a. m	11.15 a. m	.02	.....	NW.
9	56	35	21	7.15 p. m	During night	.08	.....	NW.
10	73	35	38	.....	.....	.....	.....	NW.
11	78	42	36	.....	.....	.....	.....	S.
12	82	45	37	1.25 p. m	2.10 p. m	Inappreciable.	.....	W.
13	80	47	33	3.05 p. m	3.30 p. m	.01	.....	NW.
14	79	43	36	.....	.....	.....	.....	SE.
15	65	42	23	10.15 a. m	10.35 a. m	Inappreciable.	.....	SE.
16	65	45	20	11.50 a. m	4.15 p. m	.12	.....	E.
17	75	42	33	.....	.....	.....	.....	SE.
18	71	49	22	During night	During night	.01	.....	W.
19	64	39	25	4.40 p. m	5.15 p. m	.09	.....	SE.
20	70	34	36	.....	.....	.....	.....	NW.
21	81	37	44	.....	.....	.....	.....	S.
22	79	44	35	1.35 p. m	1.55 p. m	.01	.....	S.
23	78	53	25	.....	.....	.....	.....	S.
24	77	41	36	.....	.....	.....	.....	S.
25	86	42	44	.....	.....	.....	.....	SE.
26	87	53	34	.....	.....	.....	.....	S.
27	82	50	32	.....	.....	.....	.....	S.
28	63	45	18	12.15 p. m	3.15 p. m	.08	.....	S.
29	74	45	29	1.40 p. m	3.35 p. m	.01	.....	SE.
30	81	47	34	.....	.....	.....	.....	S.

Summary for the month of June.

Number of days of rain 14
 Total precipitation inch.. .66

Temperature during month: Highest, 87°, on the 26th; lowest, 33°, on the 2d; mean, 57°.43; mean range, 30°.27.

REPORT

OF THE

SUPERINTENDENT OF THE HOT SPRINGS RESERVATION.

HOT SPRINGS RESERVATION,
OFFICE OF THE SUPERINTENDENT,
Hot Springs, Ark., August 14, 1889.

SIR: In obedience to the instructions contained in your letter of July 19, 1889, I have the honor to submit the following report of the operations of this office for the fiscal year ending June 30, 1889.

As I took charge of this office and entered upon my duties here on June 19, 1889, my incumbency covers but a small portion of the fiscal year and the operations of this office to be embraced in this report. All of the receipts, expenditures, and operations of the office for said year were under the administration of my predecessor.

This reservation, although originally containing four entire sections and, nominally, 2 miles square by sectional numbers, contains but 2,529.10 acres. The Hot Springs Commissioners, appointed under the acts of Congress approved March 3, 1877, and December 16, 1878, subdivided the original "Hot Springs Reservation" as follows:

	Acres.
Hot Springs Mountain	264.93
North Mountain	224.74
Sugar Loaf Mountain	129.02
West Mountain	281.94
City lots	1,270.10
Area of streets and alleys	358.37
Total area	2,529.10

The four mountains mentioned above, containing an area of 900.63 acres, constitute the "permanent reservation," and are "forever reserved from sale and dedicated to public use as parks." (Act of Congress approved June 16, 1880, sec. 3.)

The following table shows the number of city lots laid out by the Hot Springs Commissioners, the number awarded to individuals, the number sold and donated, and the number unsold and now under the care of this office, viz:

Total number of lots laid out	2,019
Awarded to individuals	1,435
	584
Sold and donated	258
Unsold	326

The foregoing shows that the lands belonging to the Government and under the immediate care of this office are embraced in four sepa-

rate tracts, aggregating 900.63 acres, and 326 city lots situated in different portions of the city. The "permanent reservation" covers the four mountains already mentioned. This is subdivided into four separate and detached tracts with exterior or boundary lines aggregating about 11 miles. These mountains are largely covered with trees, and are rocky, rugged, and precipitous. There is not a road or bridle way over and across them. They are surrounded by lands belonging to individuals and a population estimated at from 10,000 to 12,000. Under these conditions I am instructed that "especial care should be taken to guard against the cutting or removal of trees and shrubs, sod, earth, or rocks, or anything belonging to the reservation, unless such removal is for the purpose of beautifying the reservation or increasing the usefulness of the same, and then only under the specific direction of the superintendent." These duties are being performed as well and fully as the limited means and help at my command will permit. The side walls and arch of rubble masonry erected by the Government over Hot Springs Creek are in good condition, and the culvert is answering the purposes for which it was designed.

There are thirteen persons and copartnerships owning bath-houses or bath-house sites or claims on the permanent reservation who paid water rent for the year just closed. The names of these houses, sites, or claims, the number of tubs paid on and the monthly receipts from each are as follows:

Name.	Tubs.	Amount.
New Rector.....	26	\$65.00
Little Rector.....	5	12.50
Big Iron.....	40	100.00
Superior.....	16	40.00
Old Hale.....	21	52.50
Unnamed (leased site).....	20	50.00
Independent.....	21	52.50
Palace.....	23	57.50
Horse Shoe.....	30	75.00
Magnesia.....	30	75.00
Ozark.....	22	55.00
Rammelsberg.....	18	45.00
Lamar.....	40	100.00
Total.....	312	780.00

The "Little Rector" is purely mythical. No house, no tubs, no water; but the "water rent" is paid each month in advance. The "Unnamed," leased site, is unoccupied and has no existence whatever except an unexpired lease, a brief history of which was submitted to you in my letter of July 24, 1889. The "water rent" on this site—20 tubs, \$50—is paid monthly in advance.

There are, including the 25 imaginary tubs, 312 tubs in the bath-houses, leased sites, and claims on the permanent reservation paying water rent—monthly, \$780; annually, \$9,360.

There are six persons or copartnerships owning bath-houses or claims off the reservation who paid water rent for the last fiscal year, as follows:

Name.	Tubs.	Amount.
Avenue.....	20	\$50.00
Rockafellow.....	20	50.00
Grand Central.....	11	27.50
Hot Springs.....	12	30.00
French.....	4	10.00
Sumpter.....	4	10.00
Total.....	71	177.50

The "French" is not in existence, having been destroyed by fire some two or three years ago. The "Sumpter" is a hotel without tubs. The "water rent" on each is paid monthly in advance. Including these two, there are six houses off the reservation paying a water rent on 71 tubs of \$177.50 per month or \$2,130 per annum.

The Arlington Hotel is on the permanent reservation and pays an annual rental of \$1,000, which is paid quarterly in advance.

I am unable to report the exact amount of expenditures for the year. My predecessor reserved that data from the files of this office when he retired. But from the monthly statements sent to this office during the year by the depository of public funds at Little Rock, Ark., I have been enabled to submit a close approximate. This gives total expenditures for the year, \$6,368.90.

The account, receipts and expenditures, may be stated as follows:

Receipts—

Water rent.....	\$11,490.00
Ground rent	1,000.00
	12,490.00

Expenditures:

Salaries, expense, repairs, improvements, etc	6,368.90
Balance	6,121.10

This shows a net income to the Government on account of the Hot Springs Reservation of \$6,121.10 for the fiscal year.

The free bath-house is an institution set apart by Congress, where the afflicted poor may come and take the baths without price or hindrance. "The superintendent shall provide and maintain a sufficient number of free baths for the use of the indigent." (Act of Congress approved December 16, 1878.) Under these conditions we furnish about 450 free baths each day, except Sundays. This aggregates about 12,000 per month, and 72,000 per year. It is with much inconvenience and crowding that this number can be accommodated with the present capacity of the house and pools; and the number of the afflicted poor seeking free baths is constantly increasing. The attention of the Department has been called to the dilapidated condition of the free bath-house building in three of the annual reports submitted by my predecessor. In his annual report for the fiscal year ending June 30, 1887, he said:

The pools are so small (9 feet square) that sometimes standing room is not to be had in them. The building itself is a piece of patchwork, of rude construction, thrown together at different periods, the women's side being contracted, but fairly comfortable otherwise, whilst the part set aside for men is a small, flimsy shanty, uninhabitable in severe weather. Its entire appearance and reality is stunted, mean, and shabby; not in accord with the benevolent designs of the Department, and unworthy to be owned by this great Government.

What more need be said now?

In this connection, I may be permitted to call attention to the fact that, in relation to the free bath-house, the law imposes the duty directly upon the superintendent to "provide and maintain a sufficient number of free baths for the use of the indigent," but has left that officer wholly powerless to do anything without the sanction of the Secretary of the Interior.

Something ought to be done to improve and enlarge the free bath-house and bathing pools. Congress, by act approved October 2, 1888

appropriated the sum of \$5,000 for that purpose, but, with the exception of preparing and submitting to the Department plans, etc., for the improvements contemplated by Congress, nothing has been done. I recommend that this subject receive early attention.

By act of Congress approved October 2, 1888, the sum of \$31,000 was appropriated "for providing a system of reservoirs, pumps, and piping, and for other purposes necessary to the collection and economical distribution of the hot water." This is a much needed improvement. Some surveys in relation to this work have been made, but beyond that nothing has been done, so far as I am informed. The present supply of hot water is barely sufficient for the demands of the bath-houses now in operation. There is an abundance here, but more than one-half of it runs to waste. I greatly fear that the increased demand for hot water consequent upon the completion of the commodious bath-houses now under construction, which it is expected will be open to the public on or before January 1, 1890, can not be supplied under the present system of collection and distribution. It appears to be almost certain that unless some important changes and improvements be made within the next few months, the Government will find itself under obligations to furnish more hot water than it can control and distribute under the present system. I therefore respectfully call special attention to this subject.

On the west front of the Hot Springs Mountain reservation, between the Arlington Hotel and Reserve avenue and the bath-house building line and Central avenue, there is a plot of ground about 1,400 feet long and averaging some 60 or 70 feet wide—being an area of about two acres—that was set in lawn-grass and young shade-trees last fall and winter by my predecessor. This is a level plat, bounded on the east by bath-houses and on the west by Central avenue, the principal street and thoroughfare of this city. The culvert over the creek is beneath it the entire length, having been filled in and leveled after the completion of the masonry work over the creek. It is admirably located for a small park, in fact, it is the only piece of ground in "the valley" owned by the Government that is at all suited for such a purpose. The young trees—about 300 in number—transplanted and the grass seeded last fall and winter, are doing fairly well, owing to seasonable rains to this date. But as considerable of the area is immediately over the arched creek, the arch being covered with earth to the depth of 2 or 3 feet, and all of the filling being principally of clay and gravel from excavations near by, there is, in my opinion, great danger of losing the lawn and very many if not all of the young shade-trees when the dry, hot weather of the summer and fall comes on, unless some provision is made for water and for liberal sprinkling during the hot, dry season. I am impressed with the importance of preserving and maintaining this small park. But without a supply of water for the purposes indicated, the work and money already expended on the grounds mentioned will be almost if not entirely lost, and the Government will own a barren, dusty plat of ground along the principal street of this city where there ought to be a green, shady, and attractive park, a convenient place for out-of-door rest for the invalids who come here for treatment. I trust that this subject will receive early and favorable consideration.

I desire to invite your attention to the concurrent opinions and recommendations in relation to certain improvements as held and expressed by a continuous line of officials who have been assigned to duty here since the Government took charge of this reservation. Under the act of Congress, approved March 3, 1877, "Hot Springs Mountain" was set apart as the "permanent reservation." But the Hot Springs Commis-

sioners, appointed under said act, after looking over the grounds and becoming familiar with the surroundings, in their final report said :

The Commission also recommend a reservation by Congress from sale of all the land included in the blocks covering the mountains. These lands are not needed for any purpose but as public grounds or parks, covered by shade-trees.

The chief engineer appointed by said Commission, in his final report, said :

The lines shown in the general plan upon the mountain blocks are simply designed to suggest the location of possible carriage roads, which may be constructed for drives at some future day.

Acting upon these recommendations, and in furtherance of the plans suggested, Congress, by act approved June 16, 1880, made the following reservation :

SEC. 3. That those divisions of the Hot Springs Reservation, known as the mountainous districts, not divided by streets on the maps made by the Commissioners, but known and defined on the map and in the report of the Commissioners as North Mountain, West Mountain, and Sugar Loaf Mountain, be, and the same are hereby, forever reserved from sale and dedicated to public use as parks, to be known, with Hot Springs Mountain, as the permanent reservation.

Mr. B. F. Kelly, the first superintendent of this reservation, in a letter to the Department, dated November, 1877, asked for a civil engineer "to lay off the mountain in drives and walks," and said :

Hot Springs Mountain is susceptible of being made one of the most beautiful and attractive parks in the country.

The following extract is from the report submitted to the Department, under date of October 31, 1882, by Mr. Alonzo Bell, late Assistant Secretary of the Interior, who visited Hot Springs in that year on official business in connection with this reservation :

The reservation of the West and North Mountains, thereby securing from spoliation the fine timber which covers them, was a public blessing, and will add materially to the future beauty and comfort of the place. The time will doubtless come when these mountains will be laid out into beautiful parks, with paths skirting their shady sides, and conveniently arranged outlooks on their summits, from which the visitor can enjoy the wild, magnificent scenery of the surrounding country. The reservation of these springs by the United States carries with it certain responsibilities which can not be ignored, and which no spirit of false economy should evade. The money value of these springs is beyond estimate; their therapeutic value can not be described in dollars and cents; they belong to those inestimable gifts of nature, freely bestowed, without price, yet priceless; a boon to suffering humanity that should never be restricted or monopolized by any combination of individuals. The design of the Government in retaining in itself control of these waters was to afford to the greatest number the greatest possible good, and by wise regulations prevent the possibility of extortion. The springs were to be the property of the States, the common heritage of all the people, free from local management, prejudice, or sectional control. They were to be purely national in their character, within the reach of all. * * * The trust reposed by the people in the United States is a sacred one. It can not be wholly discharged by simply supervising the flow of the waters. The higher obligation rests upon it to fully develop the possibilities of the springs, by exhaustive scientific investigation, and by carefully attending to the sanitary requirements of the reservation and its surroundings. Under the fostering care of the United States, Hot Springs should become the great national sanitarium of the continent, its health-giving waters attracting invalids from all parts of the world, and its natural scenery, beautified by art, inviting thousands to it, as a resort where health and pleasure may be found in a pure atmosphere and agreeable climate.

Superintendents Hamblen and Field urged the improvement of that portion of the reservation dedicated to public use as parks. Superintendent Field, in his annual report for the fiscal year ended June 30, 1885, aptly said :

Having faith in the remarkable curative properties of the springs, and since the Government holds them in trust for the public good, with an implied obligation to

extend their benefits as much as possible, I think the place should be made attractive, so that the afflicted may be induced to come, and so prolong their stay as to reap the full benefit of the waters. As a means to this end, I recommend that a sum of money be appropriated for the ornamentation of Hot Springs Mountain; at least that walks and seats be provided along its western slope, near the sources of the springs, so that invalids can have some retired and picturesque spot for exercise and rest. Though naturally beautiful, and susceptible of being made a charming resort, it is a wilderness, unfrequented except by an occasional tramp.

The foregoing opinions, arguments, and facts are presented in behalf of my earnest plea for an appropriation to improve and beautify a portion of the permanent reservation, by clearing the underbrush and laying out and building walks and drives about the mountains. It is a noteworthy fact that those who have been on the ground and made personal investigations concur in the recommendation that these improvements be made.

Many thousands of people visit this marvelous valley each year, and the number is constantly increasing as the years come and go. Each of the numerous wonderful cures adds additional fame to the mystic powers given to these waters by agencies unknown to man. The effect is known and felt by thousands, but science and learning have so far failed to discover or report the cause. They are truly one of nature's gracious blessings to man. The location of the Hot Springs here in this narrow, rugged valley, surrounded by lofty spurs of the Ozark Mountain, may be puzzling to man, but the inscrutable and beneficent purposes of the Creator will become manifest at the appointed time. These springs are no longer of local concern and reputation. Their name and fame have become national and world-wide. The afflicted from the lakes and the seas and from sunny climes and distant shores come here to be made whole, and are not disappointed. Capital and skill from many States have been attracted here to provide for the comfort and necessities of the thousands of visitors. Private capital and enterprise have done and are doing much in that direction. Spacious and well-appointed hotels and bath-houses are being erected. Indeed, this city seems to have been born again.

It would, then, appear proper and seasonable for the Government to keep pace with this grand onward march. Congress has reserved the four mountains overlooking this "valley of vapors" from sale, and dedicated them to public use as parks, where the visitor may have quiet and rest and invigorating atmosphere and enjoy scenery that is charming, sublime, and beautiful. Private capital is doing much more in this direction than the Government. But it is hoped that the Government will at least keep pace with private enterprise.

I therefore respectfully and earnestly recommend that an appropriation of not less than \$10,000 be made by Congress, to be expended in clearing the underbrush and otherwise beautifying Hot Springs Mountain and in laying out and building walks and drives around and over the mountains constituting the permanent reservation.

I am, sir, very respectfully, your obedient servant,

FRANK M. THOMPSON,
Superintendent.

The SECRETARY OF THE INTERIOR,
Washington, D. C.

R E P O R T
OF THE
ARCHITECT OF THE UNITED STATES CAPITOL.

OFFICE OF ARCHITECT UNITED STATES CAPITOL,
Washington, D. C., July 1, 1889.

SIR: As relates to the progress made, during the last fiscal year, on the various works under the control of this office, I have the honor to submit the following:

THE CAPITOL.

In addition to keeping the building in good repair, there have been various improvements made thereto.

The steam-heating has been extended to the committee-rooms and Senate library, in the attic story, of the old portion of the building.

New steam-boilers have been placed in the vaults of the House of Representatives.

The Senate boilers have been in use all last winter, and have afforded an increase of power, with a perceptible saving of fuel. The House boilers have not yet been used.

Drinking-fountains have been placed in the connecting corridors of each wing of the building, at a cost of \$1,202.37, leaving \$297.63 on hand of the amount appropriated for the purpose.

The pictures in the Rotunda have been protected by strong brass railings, at a cost of \$390, leaving an unexpended balance of \$110 on account of that work.

The construction of a tunnel, for use with a power elevator, for the House wing is well under way.

The heating apparatus of both wings have worked satisfactorily during the last session. The temperature of the House has never been higher than 71 degrees or lower than 69 degrees, Fahrenheit, any day during the winter months. This equality of temperature, considering the fluctuation of the number of persons visiting the galleries, is remarkable.

The Sawyer-Man Electric Company have used the electric-lighting plant in the Senate wing to the satisfaction of all, so far as the lights are concerned, but as the system used is considered objectionable, the plant has not been accepted, and, in consequence, no payment on account of the same has been made.

As the whole subject of electric lighting of the House wing has been referred to the Committee on Public Buildings and Grounds, nothing further will be done in extending the present plant until further authority is given by Congress.

It is supposed that a satisfactory arrangement can be made with the Electric Lighting Company to permit the use of the present apparatus next session, or until such time as Congress may make some definite arrangement for this lighting.

CAPITOL TERRACES.

The marble and granite works of the terraces and stair-ways are nearly completed; and it is expected that some of the interior rooms will be ready for occupancy during the next session of Congress.

The importance given to the western front of the Capitol by the construction of this terrace seems to require that the central portion of the building be extended and remodeled, which, when done, should be constructed of marble, as are the porticoes of the wings.

Plans have been made for this proposed improvement.

CAPITOL GROUNDS.

Of these grounds, Mr. Frederick Law Olmsted, landscape architect, reports:

The lower parts of the terrace of the Capitol having been completed, the grading and finishing of the slopes in connection with them have been continued, and plantations have been made along the base of the structure. The thinning and re-adjustment of other plantations have continued as the expansion by growth of the earlier planted trees and shrubs has given occasion.

The plantations have, with the exception of a few trees, been very healthy, and their rate of growth continues to be remarkable.

The proposed construction of the ventilating and air duct, on the Senate side of the Capitol, will require the removal of a considerable amount of earth, which I recommend to be disposed of in such manner as to provide for a little larger undulation of the surface of the slopes below the line of walk which the air-duct will cross, and which leads northwardly from the foot of the western stair-case. This will be an improvement that would have been made sooner but for the necessity of bringing the material from a distance.

SENATE STABLES AND ENGINE-HOUSE.

Various repairs and improvements have been made to these buildings, at a cost of \$400.

FISH COMMISSION BUILDING.

The Armory Building, on the Mall, city of Washington, has, in compliance with the act approved March 2, 1889, been arranged and fitted up for the accommodation of the offices of the Commissioner of Fisheries, and the work is so far advanced at this date as to permit the Commissioner to vacate the rented premises heretofore occupied as his offices.

A large frame store house has also been constructed in connection with this building, for storing material connected with the Smithsonian Institution.

COURT-HOUSE, WASHINGTON, D. C.

Large coal-vaults have been constructed at the north front of this building, at a cost of \$2,400.

Sundry repairs have been made to the interior of the building also, costing \$1,000.

BOTANIC GARDEN.

Among the most important improvements made at this place were supplying and putting in place new hot-water boilers for the conservatory and putting down granolithic pavement at the First street entrance.

All the smaller buildings have been kept in reasonably good repair, a large amount of painting and glazing having been done to them.

The injury done to the conservatory by the storm of September 17, 1888, has been repaired. These damages were extensive; for, besides the breakage of about two thousand lights of glass, the heavy iron chimney-cap was blown off, some of the iron ribs of the dome were broken, and one wall of the building was bulged six inches out of line.

The cost of these repairs was paid out of the fund provided for the usual annual repairs, and in consequence some work which was estimated for had to be omitted, as the repairs to the conservatory were imperative, the most valuable plants in the collection being stored in this building.

The disbursements under each head made by the disbursing agent of the Department of the Interior for the works within named, are given herewith somewhat in detail.

FOR WORK AT THE CAPITOL AND FOR GENERAL REPAIRS THEREOF.

Pay rolls, mechanics' labor, etc.	\$25,163.62
Labor, by voucher.....	990.29
Paints, oils, and glass.....	1,208.09
Materials for plumbing and steam-fitting.....	1,876.91
Hardware, iron, etc.	1,120.77
Hauling and expressage.....	57.84
The care and repairing clocks in Rotunda and Statuary Hall	100.00
Forage	144.00
Stationery	115.91
Silver and nickel plating.....	158.90
Bricks, lime, and sand.....	104.40
Grate-bars and fire-brick	145.13
Brushes, brooms, sponge, soap, etc.	558.62
Lumber.....	957.56
Asphalt concreting.....	8.00
Chimney-caps.....	264.00
Coal.....	43.70
Material for covering doors.....	82.13
Harness	20.00
Repairs to engines and for material.....	972.68
Flooring tile.....	266.95
Miscellaneous	104.28
Balance unexpended	536.22
Total	35,000.00
Amount appropriated October 2, 1887.....	35,000.00

THE CAPITOL TERRACES.

Pay rolls, laborers, mechanics, etc.	47,296.70
Labor, by voucher.....	846.95
Marble and granite work.....	58,319.46
Bricks, lime, cement, and sand	14,261.25
Rolled-iron beams.....	3,904.05
Granolithic and artificial stone pavement	2,977.50
Vault lights, cast-iron work, etc.	775.50
Plumbing and gas-fitting material.....	1,449.57
Hardware and metals	871.74
Bronze work.....	1,139.55
Lumber.....	1,300.30
Laying stone flagging.....	158.02

Hauling and expressage.....	\$193.90
Coal	124.75
Advertising.....	2.48
Stationery	5.50
Miscellaneous	25.20
Balance unexpended	56,394.67
Total	190,047.09
Available July 1, 1888	190,047.09

THE CAPITOL GROUNDS.

Pay-rolls, laborers, mechanics, etc.....	15,375.72
Labor, on voucher	163.65
Trees and plants	475.05
Gravel, soil, fertilizer, seed, etc	872.04
Asphaltic pavement.....	1,046.56
Salary and expenses, landscape architect	544.09
Bronze and wrought-iron work	439.03
Tools and hardware.....	244.79
Artificial stone pavement.....	299.59
Paints and oils.....	32.38
Tinwork.....	29.00
Lumber.....	176.15
Brooms	103.75
Plumbing and material.....	94.34
Hauling freight, and express	79.12
Balance unexpended.....	24.74
Total	21,000.00
Amount appropriated October 2, 1887.....	20,000.00

LIGHTING CAPITOL AND GROUNDS.

Gas service	16,706.51
Pay-rolls, lamp-lighters, and plumbers.....	3,328.00
Gas-fixtures, and other material.....	474.95
Electric lighting service.....	3,476.41
Stationery (record book)	12.00
Balance unexpended.....	2.13
Total	24,000.00
Amount appropriated October 2, 1887.....	24,000.00

ELECTRIC LIGHT PLANT, SENATE.

Electric lamps, for fixtures and for connections and other material.....	251.65
Balance unexpended	18,714.31
Total	18,965.96
Available July 1, 1888.....	18,965.96

STEAM BOILERS, HOUSE WING.

Pay-rolls, laborers, mechanics, etc.....	2,233.05
Abendroth & Root Manufacturing Company for steam-boilers.....	7,065.00
Fire-clay and bricks.....	750.31
Steam-pipe, fittings, and iron work.....	98.95
Advertising	15.78
Balance unexpended	1,836.91
Total	12,000.00
Amount appropriated October 2, 1888.....	12,000.00

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FOR ARTIFICIAL PAVEMENT AND FOR FOUNTAIN IN FRONT OF TERRACE.

Bronze lamp-posts and vases	\$1, 139. 55
Draughtsman	60. 00
Balance unexpended	27, 800. 45
Total	29, 000. 00
Amount appropriated October 2, 1888	15, 000. 00
Amount appropriated March 2, 1889	14, 000. 00
	29, 000. 00

ALTERATION AND REPAIRS, ARMORY BUILDING.

Pay-rolls, laborers, mechanics, etc	2, 031. 73
Lumber and joiner work	998. 81
Steam-fitting and material	996. 19
Plumbing and gas-fitting and material	533. 04
Painting and for materials	479. 96
Plastering	430. 00
Tin and copper work	369. 97
Paper-hanging	121. 45
Hardware	120. 85
Gas-fixtures	61. 65
Balance unexpended	856. 35
Total	7, 000. 00
Amount appropriated March 2, 1889	7, 000. 00

Very respectfully,

EDWARD CLARK,
Architect United States Capitol.

The SECRETARY OF THE INTERIOR.

ANNUAL REPORT

OF THE

UTAH COMMISSION.

SALT LAKE CITY, *September 23, 1889.*

SIR: The Utah Commission respectfully submits the following report of its proceedings during the past year:

Immediately after the election for Territorial officers held in August, 1888, the Commission began the work necessary for the November election, at which a Delegate to represent the Territory in Congress was to be chosen, by causing a thorough revision of the registration lists throughout the Territory, which was completed during the month of September.

The election was held on the 6th day of November, 1888, and was general except in a few precincts, the voters in which failed to take sufficient interest to appear and vote, although judges of election had been appointed for each of said precincts.

Under the authority conferred by the act of Congress approved March 22, 1882, entitled "An act to amend section 5352 of the Revised Statutes of the United States, and for other purposes," the Commission, on the 3d day of November, 1888, appointed a canvassing board composed of five reputable citizens of the Territory, three of whom were members of the Liberal party, and two of the People's party, viz, Orlando W. Powers, Henry W. Lawrence, Robert W. Cross, Lewis W. Hills, and Frank J. Cannon, to canvass the returns of said election and declare the result.

This board of canvassers met at the rooms of the Commission in Salt Lake City, on Friday the 16th of November, 1888, and organized by each taking the oath prescribed by law, and electing a chairman and secretary from their number. It then, in the presence of the Commission, proceeded to canvass the returns of said election, as the same had been returned to the Commission by the various election boards, and, as the result of said canvass, reported to the Commission that John T. Caine had received 10,127 votes, R. N. Baskin had received 3,484 votes, and Samuel R. Thurman had received 511 votes, and that there were 7 scattering votes cast; and upon said canvass and report, the said John T. Caine was declared elected, and given the proper certificate of his election as Delegate to the Fifty-first Congress from Utah Territory.

The aggregate of votes cast during the two years since the passage of the act of Congress which took effect on the 3d of March, 1887, and is known as the "Edmunds-Tucker Act," upon the basis of the votes cast for members of the legislative council, is as follows:

Votes cast in 1887.....	16,150
Votes cast in 1889.....	20,495
Increase in 1889 over 1887, 4,342, or 26 $\frac{8}{10}$ per cent.	

An election was held in August, 1888, for a portion of the county officers in each county in the Territory, at which the aggregate vote cast was 15,012, a falling off of 1,138 votes from the August election of the year previous, while at the election for Delegate to Congress, held on the 6th of November, 1888, the aggregate vote cast was 14,129, which was 2,021 votes less than were cast at the August election in 1887 and 883 votes less than were cast at the August election in 1888. This falling off in the votes can be reasonably accounted for by the fact that greater interest is taken in those elections at which members of the legislature are chosen, which is manifest in the increased vote of 1889 over that of 1887, although a portion of this increase is doubtless caused by the influx of population which is continually coming into the Territory.

The comparatively meager vote for Delegate in Congress may be partially accounted for in the fact that the People's party, or the Mormons, are largely in the majority in the Territory, and while the Liberal party, or the Gentiles, as they are called, felt sufficient interest to name a candidate and to preserve their party organization, it was done without the remotest prospect or hope of success, and great numbers remained away from the polls. It is also probable that many of the People's party, regarding the success of their candidate as assured, did not take the trouble to vote where it was attended with any considerable inconvenience.

Since our last report, the Commission has caused municipal elections to be held in the following cities and towns:

Cities and towns.	Counties.	Cities and towns.	Counties.
1. Ephraim City.....	San Pete.	13. Park City.....	Summit.
2. Fountain Green.....	Do.	14. Ogden.....	Weber.
3. Manti.....	Do.	15. Brigham City.....	Box Elder.
4. Beaver City.....	Beaver.	16. Bear River.....	Do.
5. Alpine City.....	Utah.	17. Corinne City.....	Do.
6. Payson.....	Do.	18. Grantsville.....	Tooele.
7. Pleasant Grove.....	Do.	19. Tooele City.....	Do.
8. Spanish Fork.....	Do.	20. Kanab.....	Kane.
9. Lehi.....	Do.	21. Monroe.....	Sevier.
10. American Fork.....	Do.	22. Fillmore.....	Millard.
11. Springville.....	Do.	23. Heber.....	Wasatch.
12. Coalville.....	Summit.		

From the organization of the Commission to the present time, the registrations and elections held under its supervision have been free from all charges of fraud and unfairness, with a single exception.

In February, 1889, at the municipal election for the city of Ogden, in Weber County, there was a very bitter contest between the opposing parties, in which the Liberal, or Non-Mormon party, prevailed over the People's, or Mormon party, and carried the election for the first time in the history of the city.

The leaders of the People's party claimed that there had been frauds perpetrated by the Liberal party sufficient to bring about this result, both in the matter of registration and at the polls.

It is a noticeable fact, that notwithstanding these charges of fraud no action has been brought to test the legality of the election of any officer, either as to the manner of registration, or as to illegal voting at the polls, or as to the canvass of the returns. Nor has any specific charge of fraud ever been brought to the knowledge of this Commission, but only general charges made through the party newspapers or by individual members of the People's party, wholly unsupported by proof.

The commission has no information of anything like fraud being imputed in any case to the commission, but only to its agents in the persons of the registrars and judges of election appointed by it.

The Commission deem it just to itself to state that it has studiously endeavored in all instances to appoint the very best men to be procured who will accept the positions, selecting in each instance discreet, sober, honest, fair-minded men, as free from partisan influence and bias as practicable, and has invariably urged upon them to do equal and exact justice to all citizens of the Territory, without reference to creed or religion, and where an abuse of power by those appointed as registrars or judges has been brought to the knowledge of the commission it has not hesitated in its action, but has promptly removed such persons from office.

This, however, we are gratified to say, has occurred in but few instances, and the Commission takes great pleasure in bearing witness to the fidelity and efficiency with which the majority of its appointees have discharged their difficult duties, and to the uniform fairness of the elections throughout the Territory.

The complaint most frequently made to the Commission is, that the registration lists of Salt Lake City, and of Ogden, contain each a large number of names of persons who can not be found on inquiry and search, and that they are kept there by the registration officers to enable the Liberal party to have the names represented by persons who are not legal voters.

It has not been brought to the knowledge of the Commission in any way that this fraud has been perpetrated in a single instance, but in order to satisfy the seeming fears of leading members of the People's party the Commission proceeded to Ogden prior to the last election, and held a conference with the registrars and judges of election appointed by the Commission, in the presence of a number of leaders and official representatives of the People's party, and agreed upon rules for the conduct of the approaching election which were satisfactory to both parties, and the Commission has since heard no complaint in regard to the fairness of that election, and does not believe that the frauds anticipated therein, or those charged in the former elections, were attempted to be practiced.

The whole trouble in regard to the condition of the registration lists complained of is owing to the laws in regard to registration and elections enacted by the territorial legislature, which is the creature of and dominated the People's party, or Mormon party, and those laws must be amended before any right of complaint will exist.

All registered voters have been required to take the oath prescribed by law before being registered, and these oaths are filed in the office of the probate court of the respective counties.

In making the revision of the registration lists the registrar is required "to make careful inquiry if any person whose name is on his list has died or removed from the precinct, or is otherwise disqualified as a voter of such precinct, and, if so, to erase his name therefrom." (Compiled Laws of Utah, Vol. 1, page 319, sec. 240.)

It will be seen from this that he can only erase names while revising the lists when he has satisfactory information that the registered voter "has died or removed from the precinct, or is otherwise disqualified as a voter." The simple fact that he does not find him is not sufficient.

After the revision it is provided that the lists be posted for fifteen days, and for hearing objections to the right to vote of any person reg-

istered until sunset of the fifth day preceding the election, but this is restricted by a somewhat remarkable provision of the statute, as follows:

Said objections shall be made by a qualified voter in writing, delivered to said justice (under the Edmunds law the registrar acts instead of the justice as mentioned in the Territorial act), who shall issue a written notice to the person objected to, stating the place, day and hour when the objection will be heard. *The person making the objection shall serve, or cause to be served, said notice upon the person objected to, and shall also make returns of such service to the justice before whom the objection shall be heard.* (Comp. Laws Utah, 320, 321, sec. 246.)

There is no other provision in the law for purging the registration lists, and it is impossible to serve the notice required, if the person objected to has died, removed, or is absent and can not be found, and if it be a fact, as alleged, that many names of non-voters are upon the lists, it is the fault of the law and not of the registrars, and the law should be amended.

When the Commission was first organized, it was a matter of grave consideration with the able men then composing it, headed by that wise and safe counselor ex-Governor Alexander Ramsey, as chairman, as to the proper policy to be pursued in discharging the very responsible as well as delicate trust committed to its direction.

After mature thought and deliberation, it was unanimously considered by the Commission that, under the act of Congress establishing it, the duty of the Commission was to so shape its policy, and the administration of the affairs committed to it, as to be in harmony with the spirit of the laws of Congress regarding the principal and perhaps sole object in view in its creation to be the extinction of polygamy, and the stamping out, as far as possible, of all polygamous influences and tendencies.

How best to accomplish this was a grave question, and was approached with some hesitation and much serious thought, but as subsequent events have shown, was determined wisely.

The act of Congress of March 22, 1882, commonly known as the "Edmunds law," cut off polygamists, bigamists, and those who might thereafter be convicted of kindred offenses, from exercising the right of suffrage, and from the privilege of holding office in the Territory, and it became the duty of the Commission to exclude all such persons from participating in the elections.

The Commission did not, however, consider this to be the sole object of the law, but that it was also intended to make those offenses which were practiced by the Mormon people in direct violation of the law, and which were under the ban of civilization everywhere, odious.

In order to accomplish this, and to thoroughly convince the Mormon people of its earnestness of purpose, and to impress them with the idea that the Government, through its authorized agencies, meant that polygamy should be punished and eradicated, and its sovereign power in the enactment of laws for the suppression and punishment of crime should be respected and obeyed by all people within its jurisdiction and limits, the Commission adopted the rule of appointing registrars, wherever practicable, from the Gentile or non-Mormon element of the population, believing them to be more in harmony with the attempts to carry out and enforce the provisions of the law than members of the other party, and in the matter of judges of election, the law requiring three persons, it appointed, wherever they could be found, two out of the three from the non-Mormon element. In many precincts none but Mormons were to be found, and in such places Mormons were appointed. They have thus had representation upon all election boards, and entire control of some.

This policy of the Commission has been steadily pursued to the present time, and, it is believed, with the most satisfactory results, as evidenced by the steady increase of the anti-Mormon vote, and by the abandonment, except in some remote districts, of the open practice of those offenses for the suppression of which the law was enacted.

Notwithstanding these results, this line of policy has not met the unanimous approval of the non-Mormon element, which has repeatedly urged the Commission to the adoption of more stringent regulations, some of which were not only considered by the Commission to be of doubtful expediency, but to be without the pale of the law and in excess of its powers as defined by law.

At the same time the non-Mormons were complaining because the Commission failed to inaugurate the extreme measures urged by them the Mormon element was making numerous complaints as to what they denominate the injustice done them in denying to them equal or proportionate representation in all positions which the Commission has power to fill.

There would be some degree of plausibility in their demands if the population and the division of the political parties were to be considered numerically only, for the Mormon element is largely in the majority in most of the voting precincts, the exceptions being in two or three cities where the anti-Mormon element has centered and in the mining districts.

But the Commission has acted on the idea that it was the intention of Congress to impress upon the Mormon people that it has a fixed purpose to compel obedience to the laws enacted by it, and, if possible, to bring them and their institutions into harmonious relations with the General Government; that to do this it has prescribed grave punishments for offenses either sanctioned or tolerated by them and a denial of the right to participate in the affairs of the Government by voting or holding any office of honor, trust, or profit to all who are guilty of such offenses, and thereby to convince those who are not actual offenders and criminals, but who adhere to the same creed and lend their moral, if not open, support and encouragement to those who do violate the law, concealing their crimes and persons from the officers of the law and ostracising those of their number who give aid in enforcing the law in any manner; that they, to that extent, are under bans and not to be promoted to places of trust and emolument so long as they thus give aid and comfort to those who defy the law and lionize those who are convicted and punished as heroes and martyrs who have suffered persecution for conscience sake by meeting them with bands and triumphal processions as they leave the door of the penitentiary and promoting them to higher offices in the church.

It may be considered a quasi punishment imposed upon them while they are still permitted to use the ballot in all elections held in the Territory. It is quite certain, too, that if Mormons were placed in control of the election machinery they would give the most liberal construction possible in favor of the peculiar practices and tenets they profess to hold as revelations from God.

We therefore insist that the Commission did right originally in adopting the rule that the duties pertaining to registrations and elections should be placed in the hands of and be performed by those who were not in sympathy with the Mormon church and creed, and that the wisdom of a strict adherence to that line of policy has been demonstrated by the changes that have been produced and in the awakened prosperity and progress which are everywhere visible.

Polygamy is not at the present openly practiced, except perhaps in a few remote and out of the way places, but the non-Mormon element insists that plural marriages are solemnized clandestinely and practiced secretly in the larger centers and throughout the Territory. This may or may not be true. This Commission neither affirms nor denies in the absence of positive evidence. We know this, however, to be a fact. There are places where Mormons must necessarily be appointed registration officers for the reason that no Gentile qualified to hold the position is to be found in the community in which the duties are to be performed. This Commission annually sends out circulars to each registration officer in the Territory, requesting him to report any cases of which he may have knowledge, or reasonable cause to believe, of parties who have entered into polygamy or bigamy, and while from a number of places reports have been made by Gentile registrars, giving names, times, and places as nearly as practicable, not one case has ever been reported by a Mormon registrar, although it is sometimes strongly asserted, and generally believed, that the practice has been indulged in openly in some of their precincts.

Doubtless many members of the Mormon church never have practiced, and never intend to practice polygamy, and perhaps many of them, *per se*, do not believe in the practice, but from the stand-point of their faith and creed they accept it as a revelation from God, through the Prophet, Seer, and Revelator, Joseph Smith, ratified, confirmed, approved, and practiced by their great President, Brigham Young, and their so-called Apostles; believe that it is approved and sanctified by inspiration, and the unbroken and warm approval of the church and all its saints and dignitaries, a majority of whom have practiced it for more than half a century; that it is permitted and justified by the Almighty and in the teachings of the Bible, and that whoever desires to do so should have the right to comply with this ordinance of the church, as well as that of baptism or any other, and that the person who does so will attain a higher exaltation in heaven than he who contents himself with one wife.

While the individual member may not wish and will not take more than one wife, if his neighbor wishes two or more he thinks it right for his neighbor to have them, and that he should not be molested in the enjoyment of the provision of what he regards as the "higher law," and if his neighbor for this be convicted of an offense against the laws of the land he is in his eyes persecuted instead of prosecuted, and becomes one of the martyrs of the church.

All laws forbidding the practice he pronounces unconstitutional, as an interference with religion, and he devoutly believes he is under no obligation to obey them, except under compulsion.

That some grounds exist for the belief, so prevalent in Utah, that polygamy is still taught by the church as a saving ordinance and is secretly practiced by its devotees, is evidenced by public utterances of its leading authorities and teachers, and by publications in the printed organs of the church. The instances of this which will be given are not selected from antiquarian documents, nor from the utterances of obscure and unenlightened men, but are from the mouths of those in authority and are of to-day.

The Deseret News is the official organ of the so-called "Church of Jesus Christ of Latter-Day Saints," and of the People's party of Utah. Wilford Woodruff is the president and official head of the church, and George Q. Cannon, ex-delegate to Congress, bears the title of president, councillor, apostle, and perhaps many others, and the "counsels" of

both have great if not controlling influence over the minds of their followers. They speak *ex cathedra*, and their slightest expressions have the weight of "thus saith the Lord."

The Deseret News of June 24, 1889, contains "remarks by President George Q. Cannon at a priesthood meeting, held at Manti (San Pete Stake conference), May 19, 1889, reported by A. Winter," in which the following appears:

Every young man and every young woman should live so that he or she can get a recommendation from the bishop to go to the temple and be married according to the holy order which God has revealed.

In its issues of July 15, 1889, are the remarks of the same distinguished teacher, delivered in the tabernacle on the preceding day, Sunday, July 14, from which extracts are given which seem to teach that all the church has taught is righteousness, and not sin, and that the prosecutions of the "saints" for the crime of polygamy are "persecutions":

They hold that the Gospel of the Lord Jesus Christ has taken upon the hearts of those who have embraced it in our day is due to the fact that the message was a true one, that the promises made were fulfilled, that those who obeyed had received the testimony according to the promise that had been given. If it had not been so, these valleys would not now be peopled by Latter-Day Saints; these settlements—extending north and south, east and west—would not have had an existence; this tabernacle would never have been built; this temple, so near its completion, would never have had a foundation-stone laid. But because the message was from Heaven, and because Heaven bestowed the gifts and blessings as the elders had promised, therefore the Latter-Day Saints have gathered together here; they have come from various lands; they have obeyed the voice of God, and have testified that through their obedience they have received the fulfillment of that promise.

It is this that has created this cohesion, this union, this identity of interests, this oneness in knitting the people together and making them to a great extent of one heart and one mind. Now, if there had been anything connected with this message that would have invited or enticed men to do evil and to have strayed from righteousness, those who heard it would have had evidence that it was not of God, that God had not inspired those men to teach such doctrines. But who is there that has heard the Gospel of the Son of God preached now for these nearly sixty years has ever heard any sentiment, any doctrine that has enticed men to do evil, taught by a servant of God? On the contrary, the world can know for itself; and in this respect the world is left without excuse. At no time nor under any circumstances has error, sin, and wickedness been taught by those who have held authority in this church to teach the people.

Joseph Smith was killed by wicked men in a most cruel, heartless, and dishonorable manner; but from the time that he first stood before the people and declared unto them the message which God had given unto him, up to the last hour of his life, no one heard proceeding from his mouth any doctrine, any principle, counsel, or suggestion that was not of God and that did not invite men to do right and forsake sin. So it has been from that day until the present. It has been a constant characteristic of the teaching of the servants of God. They have entreated the people, they have labored earnestly and unceasingly with them to do right, to serve God, to keep his commandments, to forsake sin. They have denounced in unmistakable terms everything that was iniquitous and wrong, and the people have been taught invariably that it is far better for them to suffer persecution for keeping the commandments of God than to do anything that would grieve the spirit of God or cause it to be withdrawn from them. These have been the constant teachings of this church, and if we have been persecuted it has not been for sin. If any of our people have had their blood shed, it is not because they have violated the commandments of God; it has not been because they were greater sinners than their fellows. If any of them have been sent to prison it has not been because they have done that which God has commanded should not be done; it has not been because of unrighteousness on their part or flagrant wickedness; but it has been because they have striven, according to the light and knowledge which they possess, to do that which God required at their hands.

In no instance has it been proved that the Latter-Day Saints have gone in defiance of the word of God contained in the Old and New Testament. Our doctrines are before the world for them to investigate; for them, if they be wrong, to disprove. If we have been persecuted, then, it has not been for sin. There has been no new thing in the earth; for it would be a new thing if the wicked should be persecuted by the

righteous. Such a thing has never occurred from the beginning of time. Whoever heard of righteous men banding themselves together to persecute and punish the wicked? Invariably it has been the case that the righteous have been persecuted by the wicked; that laws have been trampled upon; that good order has been overthrown in order to reach and punish righteous people. The Latter-Day Saints have been driven from their homes in the States; their houses have been burned, their property destroyed, and they themselves have been driven out. Some of them have been murdered and others have fallen through persecution by the wayside; but it has not been because they were more wicked than other people. The laws were not trampled upon, the Constitution was not violated in order to punish the wickedness that could not be punished by any other means. It has been because we have received and taught, as we believed, the everlasting Gospel—the Gospel of the Son of God.

I hear of murmuring. This is a time of trial for the Latter-Day Saints. We have now for upwards of four years been undergoing persecutions—some have called it prosecution; but it has assumed a form of persecution in many instances. One class has been greatly tried; their faith has been greatly tested, women and children especially. They have had to undergo many afflictions; they have had to bear many sorrows. True, a good many of the people have not felt the burden of this persecution or prosecution—choose which term you please—beyond the natural sympathy they had for their brethren and sisters in affliction.

On the 27th of July, 1880, the News republished from the Ogden Standard, another paper published in the interest of the church, a highly laudatory obituary of “Elder Amos Maycock,” bishop of North Ogden, and councillor to the bishop of Pleasant View, which, in enumerating the many virtues of the deceased, gives prominence to the following:

In 1861 he married Mary Humphries, and in 1875 Mary Crandall, living with them both until 1889 [probably a typographical error for 1885], when he was arrested and convicted by his own testimony of unlawful cohabitation, two counts having been made. He was sentenced by Judge O. W. Powers February 23, 1886, to five months in the Utah penitentiary, and to pay a fine of \$100 and costs on the first count, and before serving his full term he was sentenced to six months’ imprisonment on the second count, being one of the first subjects of the segregating system. During his imprisonment he did not murmur, but firmly maintained his integrity to the principles he had espoused. * * * He died in the hope of a glorious resurrection.

The same paper, on the 16th of July, 1889, contained a lengthy editorial upon the issues of the approaching election, entitled “A word of warning,” in which it says:

Let us stand by one another and maintain our civil and religious rights.

On the 10th of August the News contained “remarks by President Wilford Woodruff at Grantsville (Tooele State conference), Monday morning, July 29, 1889, reported by A. Winter,” in which the following occurs:

Now, brethren and sisters, we are trying to prepare ourselves for exaltation and eternal life. We have received the holy priesthood. There is no change to that priesthood. It belongs to the celestial kingdom of our God. It does not belong to the terrestrial but to the celestial kingdom. If you and I ever get into the celestial kingdom we have got to keep the law of that kingdom. Show me the law that a man keeps and I will tell you where he is going. We, as Latter-Day Saints, have everything to encourage us. We have received the Gospel of Christ and the blessings thereof. What did we know in regard to God and salvation until the Lord revealed himself? Who ever knew, before the Lord revealed it to us, that a man could have his wives and his children with him in the morning of the resurrection in the family organization, with himself at the head, to dwell together for ever and ever?

What these “constant teachings” of the church in which “there is no change” consist of are revealed more fully in the following extract from the same paper of the same date:

The following is the result of an interview between a reporter of the Norwich (England) Daily Press and Elders T. E. Bassett, P. W. Baker, Isaac Seara, Joseph Gibbons, and E. Richins, missionaries from Utah. Of course in some respects the comments of the newspaper man are tinged with anti-Mormon prejudice, but the article

aids in spreading the news that preachers of the Gospel of Christ are in that part of the country, and, as a whole, the report is about as fair as one may expect from a non-Mormon press. * * * The president, by name Thomas E. Bassett, is a youngish looking man of not more than thirty, perhaps, and appears to be the junior by several years of at least three of his colleagues. All of them spoke with an unmistakable American accent. Their manner was mild and subdued, and it was hard not to feel that this mission across the Atlantic is a matter of intense religious import. * * *

"I observe that nothing is said in your articles of faith about polygamy."

"No; and in preaching it we do not advocate it; but we think it is permissible, because there is nothing in the Scriptures forbidding it. It was commanded of God anciently. The number of Mormon men having more than one wife is estimated at from 7 to 10 per cent. of the total adult population of Utah. We do not even persuade men to take one wife. Our mission is simply to preach the first principles of the Gospel." * * *

"The Mormon church seems to have got itself into hot water with the United States legislature in regard to polygamy. How can you go on practicing it in view of your article 12, which proclaims objection to the law?"

"But [said the president] we do not believe that the legislature in trying to uproot polygamy and confiscate our church property is acting in accordance with the law. The Constitution of the United States says that Congress shall make no law respecting the establishment of religion or prohibiting the free exercise of religion. Now polygamy is a part of our religion, and we hold that the law passed in prohibition of it is unconstitutional and therefore carries with it no obligation to be obeyed. The permission to practice polygamy has been revealed to us by our heavenly Father, and we believe it will tend to the salvation of the human family and ameliorate its condition here on earth."

That the teachings and practice of polygamy have not been discontinued, as is claimed by some, is further proven by the number of convictions for sexual offenses against the laws of Congress in the district courts of the United States for the Territory. The number of convictions for that class of offenses since September 1, 1888, is as follows:

Court.	Polygamy or bigamy.	Adultery.	Fornication.	Unlawful co-habitation.	Total.	Sentence suspended.
First district (Provo)	2	42	10	131	185	45
First district (Ogden)	4	.....	.....	*102	106	.....
Second district (Beaver) † .....	.....	1	1	19	21	.....
Third district (Salt Lake) .....	.....	3	.....	42	45	2
Total	6	46	11	294	357	47

*This number includes convictions for adultery and fornication, not having been separated in the report to the Commission.

†The small number in the Beaver district may partially be accounted for by the fact that the court records were destroyed by fire early in the year, and consequently there have been fewer prosecutions.

In the opinion of the Commission, the influences brought to bear under the act of Congress creating it and those amendatory thereof, together with the vigorous administration of the criminal law by the courts, have had a marked influence in restraint of polygamy. That which a few years ago was practiced openly, and flaunted in the face of the world as the boast and pride of this peculiar people, has been driven to cover and the secrecy of other crimes. If plural marriages are now celebrated it is done in the secret chambers of the temples and endowment houses, where the light of the sun never enters and no eyes but those of priests and neophytes are allowed to witness the ceremonies.

If polygamy is practiced, it is with the secrecy with which the burglar guards his housebreaking and the thief his larcenies. Few convictions are had for polygamy. Few polygamous marriages can be proven

within three years, the period of limitation, but the trials and convictions for unlawful cohabitation and kindred offenses, a frequent incident to polygamy, and generally with indications that they are of a polygamous character, are, as will be seen from the statistics presented, quite numerous in each of the three district courts of the Territory.

Those who are convicted invariably regard themselves, and are regarded by the church, as martyrs. When one is convicted, the usual announcement in the organ of the church is that he has been convicted of "living with his wives," or of "living his religion." Those eminent in the church who have been convicted of sexual crimes, on emerging from the penitentiary, have in some instances been met at the prison doors by brass bands and a procession with banners, escorted to their homes to be toasted, extolled, and feasted as though it were the conclusion of some brilliant and honorable achievement, rather than the expiration of a sentence, an expiation for a crime committed against the laws of the country, and a disgraceful confinement within the walls of a penal institution.

It is not regarded as any disgrace by the Mormons of Utah to have served a term in the penitentiary for any of the sexual offenses inhibited by the laws of Congress. On the contrary it is regarded as a badge of merit, and as entitling the persons so convicted to promotion in the church, as has been the case in some instances.

The law, as administered by the courts, mercifully keeps open the door to escape punishment for all convicted of polygamy by offering them a suspension of sentence, and amnesty for the past, upon the sole condition that they make a promise in open court to obey and live within the laws, and keep the same; yet few accept the offer so graciously made, nearly all preferring the prison life and its privations to a renunciation of the article of their creed which puts them under the ban of the law and at war, as it were, with the Government which gives them protection.

Fear of punishment for their crimes, dread of further and more stringent legislation, and a policy dictated by the hope of statehood at an early period, when they would be the State and make and administer the laws in accord with their peculiar institutions and pretended revelations, are sufficient motives to account for the prudent submission that is shown at present.

In view of the late great effort made by them to bring about statehood for Utah, this thought suggests the inquiry, suppose the Edmunds law of 1882 and the Edmunds-Tucker act of 1887 were repealed, and all things placed subject to the same control and conditions as prior to their enactment, how long would affairs remain even in their present condition? How long before the presidents, apostles, elders, and the priesthood generally, would parade the streets at the heads of their harems? How long would any gentile or non-Mormon be permitted to hold or exercise the duties of any office or place of trust in the Territory? How long, indeed, until a system of boycotting, which the priesthood knows only too well how to institute and make thoroughly efficient, would be brought into active working order and the gentile element, with its advanced civilization, its trade and its traffic, be driven from the Territory, and the Mormon theocracy be made supreme? Speculation upon these queries is profitless while the supposed condition of affairs is improbable, but their consideration may enable those who care to consider them to judge of the present outward marks of the seeming acceptance of the situation, and of the acquiescence in and obedience to the law by the Mormon people, while they insist through their

newspapers and from their pulpits that these laws of Congress are unconstitutional and void, and should neither be enforced nor obeyed, and who fail to draw any distinction between opinions upon the subject of religion, and the commission of crimes against the highest law-making power of the nation and the universal sentiment of the enlightened world.

Since September 17, 1888, there have been held under the supervision of the Commission one general election, one election for Delegate in Congress, and twenty-three municipal elections, a total of twenty-five elections.

At these elections the following number of officers have been chosen:

Delegate in Congress.....	1
Territorial officers.....	3
Members of the Territorial legislature.....	36
County officers.....	78
Municipal and precinct officers.....	244
Total.....	362

The Commission has appointed—

Registration officers.....	363
Judges of election.....	1,284
Total.....	1,647

There were registered voters in Utah—

In 1887.....	19,720
In 1888.....	24,925
In 1889.....	31,201

The increased registration in 1888 over 1887 was 5,205, or 26.3 per cent.; in 1889 over 1888 it was 6,276, or 25.2 per cent; in 1889 over 1887 it was 11,491, or 58.2 per cent.

The number of polygamous cases reported to the Commission by its registration officers since September 17, 1888, was twenty-nine.

No registration officer belonging to the Mormon Church, reported any such case from his precinct, although reports of such cases not infrequently came to the Commission unofficially.

In order to promote as far as practicable a fair and impartial election, the Commission on the 31st of July, 1889, issued, and caused to be published in the newspapers throughout the Territory, the following circular of advice and instruction:

OFFICE OF THE UTAH COMMISSION,
Salt Lake City, Utah, July 31, 1889.

To the officers of election and voters of Utah Territory:

The Utah Commission, being charged with registration and elections in the Territory, after due consideration have thought it advisable to make this public appeal to the registration officers, judges of election, and voters at the election to be held on the 5th day of August next.

The Commission is desirous of having, and as far as it has authority of law is determined to have, a fair and impartial election; that everything like fraud shall be put down; that every lawfully registered voter in the Territory shall have the privilege of depositing his ballot freely as he wishes and without intimidation, and that none who are not legally registered shall be permitted to vote, no matter what may be the circumstances.

The Commission suggests that judges of election in passing upon challenges at the polls shall do so impartially and fairly, rejecting none who are legally qualified, admitting none who are not, keeping in mind that the presumptions of law are in favor of the elector until the contrary appears.

Attention is respectfully called to the following section of the election law: "Any person who shall disturb or be guilty of any riotous conduct at any election in this Territory, or who shall disturb or interfere with the canvassing of the vote, or inter-

fere with the making of the returns, or who shall interfere with any voter in the free exercise of the elective franchise, shall be deemed guilty of a misdemeanor." (Compiled Laws of Utah, 1888, vol. 1, p. 336, sec. 266.) It is suggested that prompt arrests be made for any violation of this statute.

In the interest of fairness the Commission further suggests that in all towns and cities that no person except the registrar or his deputy, judges of election, the sheriff or his deputies, and such challengers (not more than two) as may be selected by each party shall be permitted to remain within 100 feet of the polls, and, as far as practicable, have it so arranged that but one voter shall approach the polls at one and the same time, and when one voter has voted he shall immediately pass beyond the limits fixed for approach to the polls.

The Commission most earnestly invoke all good citizens and all parties to lend their influence in aid of a fair and honest election; that they frown and stamp upon all frauds or attempted frauds tending to unfairness at the polls or in the returns of election, ever keeping in mind the great truth that the freedom of the American people depends on the purity of the ballot-box.

The Commission takes great pleasure in bearing witness to the fairness in all elections heretofore held under its authority and management, and with great confidence looks to the same result in the approaching election.

The manhood of Utah can not afford to prostitute itself by frauds in elections.

Respectfully,

G. L. GODFREY,
Chairman.

This circular was received and acted upon favorably by the registrars and judges generally throughout the Territory, and the Commission is much gratified to be able to say that, so far as it is informed, the election was attended with perfect fairness and regularity, and the usual complaints and charges of fraud were almost wholly wanting.

The Commission appointed a board of canvassers to canvass and make return of the election returns, consisting of five reputable citizens of the Territory, three of whom were chosen from the Liberal or Non-Mormon party, and two from the People's or Mormon party, viz: William C. Hall, Salt Lake City; Hugh M. Dougal, Springville; A. H. Nelson, Ogden; Elias A. Smith, Salt Lake City, and Heber M. Wells, of the same place.

This board of canvassers met at the rooms of the Commission, at Salt Lake City, on the 19th day of August, 1889, and after each taking the oath of office, organized by electing from their number a chairman and secretary, and under the supervision of the Commission canvassed the election returns of the several precincts, except for members of the legislative council and house of representatives, and made the proper returns of said canvass to the Commission, which ordered certificates of election to be issued to the officers declared to be elected.

The Commission, as required by act of Congress, itself canvassed the returns from the various precincts for members of the legislative council and the house of representatives, and issued certificates of election to all those persons shown by the returns to have been elected, except in the case of Samuel R. Thurman, representative elect from the sixteenth representative district.

The certificate of election was withheld in his case by reason of the Commission having been officially notified by Hon. C. S. Varian, district attorney for the United States for Utah, that said Thurman had, within a few days after the election, been arrested, and on examination before a United States commission had been held to answer to the grand jury on a charge of violation of the laws by unlawful cohabitation, which charge, if sustained, would render him ineligible for the responsible position to which he was chosen. There is a probability that he will be tried before the time for the assembling of the legislature, and, if acquitted, the proper certificate of election will be issued to him.

The result of the election for members of the legislature was—

For the legislative council:	
Liberals or anti-Mormon	2
People's or Mormon	10
Total	12
For the house of representatives:	
Liberals	5
People's	19
Total	24

The result, most gratifying to the members of the Liberal party, and correspondingly distasteful to the People's party, was the demonstration that, in a hotly-contested election, the Liberal party had polled a majority of 41 in the vote of the city of Salt Lake, and had secured a voice which could be heard and an influence which could be felt in both branches of the legislature.

An instance of the temper and disposition of the Mormon party under defeat, where they have the power left to show the intense aversion they have to anything not under their own control, is to be found in their official action since the result of the recent election in Weber County and the city of Ogden was known.

Ever since Ogden has had an organized municipal existence it has constituted but one precinct, though divided into several polling places, and had but one justice of the peace under the Territorial law which provides one such magistrate for each precinct.

At the August election the Anti-Mormon element of the precinct proved to be in the majority, and elected an "Anti-Mormon" to be justice of the peace for the ensuing term of two years.

Within three days after the election the county court, which is composed of Mormons, except the probate judge who is *ex-officio* a member and is appointed by the President, made an order—as they had the power to do under the Territorial law—abolishing Ogden precinct, and in its stead creating four precincts, and again proceeding to act under the power given it by the Territorial statutes appointed four justices to fill the vacancies caused by the abolition of the old and the formation of the new precincts.

Another instance is in point. In Beaver County, under former Territorial laws, the probate judge has always been a Mormon, and was always allowed by the county court a salary of \$200 per annum. Congress having lately by law provided for the appointment of the probate judges by the President of the United States, and the President having appointed a non-Mormon as probate judge for Beaver County, immediately after his appointment the Mormon county court met and reduced his salary to \$5 per annum.

On the 14th day of August, 1889, the Commission adopted and caused to be published the following regulations to govern the conduct of the municipal election to be held in and for Salt Lake City, February 10, 1890:

CIRCULAR OF THE UTAH COMMISSION.

Suggestions for the municipal election.

The Utah Commission issues the following circular to the registration officers who are to act for the municipal election to take place in Salt Lake City, February 10, 1890:

(1) The Utah Commission will appoint one chief registration officer for the city of Salt Lake, and one deputy registration officer for each municipal precinct in said

city, who shall commence the work of registration on Monday, the 4th day of November, A. D. 1889, and complete such registration as soon as practicable.

(2) It shall be the duty of the city registration officer prior to the 1st day of November, A. D. 1889, to apply to the county clerk of Salt Lake County for a certified copy of the registry-list, as last returned to him, of all the precincts within the corporate limits of said city.

(3) Said registration officer, upon the receipt of said lists, shall, by himself or deputy, and before the third Monday in December next, which will be the 16th day of said month, visit every dwelling-house and place of abode in each precinct of said city, and make careful inquiry if any person whose name is on said list has died or removed from the precinct, or is otherwise disqualified as a voter, and if so, to erase the name therefrom; or whether any qualified voter resides therein whose name is not on said registration list, and if so, he shall ascertain upon what ground said person claims to be a voter, and shall require any such person entitled to vote and desiring to be registered to take and subscribe to the following oath:

TERRITORY OF UTAH, *County of Salt Lake*:

I, ———, being duly sworn (or affirmed) depose and say that I am over twenty-one years of age, that I have resided in the Territory of Utah for six months last past and in this precinct for one month immediately preceding the date hereof; that I am a native-born (or naturalized as the case may be) citizen of the United States; that my full name is ———, that I am ——— years of age; that my place of business is ———, that I am a (single or) married man; that the name of my lawful wife is ———, and that I will support the Constitution of the United States and will faithfully obey the laws thereof, and especially will obey the act of Congress approved March 22, 1882, entitled "An act to amend section 5352 of the Revised Statutes of the United States in reference to bigamy and for other purposes," and that I will also obey the act of Congress of March 3, 1887, entitled "An act to amend an act entitled an act to amend section 5352 of the Revised Statutes of the United States in reference to bigamy and for other purposes, approved March 22, 1882," in respect to the crimes in said act defined and forbidden, and that I will not, directly or indirectly, aid or abet, counsel or advise, any other person to commit any of said crimes, defined by acts of Congress as polygamy, bigamy, unlawful cohabitation, incest, adultery, and fornication.

Subscribed and sworn to before me this — day of —, 1889.

Deputy Registration Officer for — Precinct, — County.

(4) Although the person applying to have his name registered as a voter may have made the foregoing oath, yet if the registrar shall, for reasonable or probable cause, believe that the applicant is then, in fact, a bigamist, polygamist, or living in unlawful cohabitation, or associating or cohabiting polygamously with persons of the other sex, or has been convicted of bigamy, polygamy, unlawful cohabitation, incest, adultery, or fornication, in our opinion the registrar may require the applicant to make the following additional affidavit:

TERRITORY OF UTAH, *County of Salt Lake*:

I, ———, further swear (or affirm) that I am not a bigamist, polygamist, or living in unlawful cohabitation, or associating or cohabiting polygamously with persons of the other sex, and that I have not been convicted of the crime of bigamy, polygamy, unlawful cohabitation, incest, adultery, or fornication.

Subscribed and sworn to before me this — day of — A. D. 18—.

Deputy Registration Officer for — Precinct, Salt Lake City.

(NOTE.—Those parts of the above forms in relation to being sworn or affirmed and as to being a native-born or naturalized citizen, or as to being single or married man, should be changed by erasure or a line drawn through the words, so as to be applicable to the case.)

Upon the receipt of such affidavit the officer shall place the name of such voter upon the registry list of such precinct.

(5) It shall also be the duty of the registration officer to give public notice in the newspapers of the city at least one week beforehand that he will be and remain, by himself or deputy, at his office, the place of which shall be properly designated by

street and number, during the week commencing on the 4th Monday in December next, which will be the 23d day of said month, for the purpose of entering on the registry list of any precinct in said city the name of any voter which may have been omitted, on such voter appearing and taking the oath aforesaid, if he has not previously taken and subscribed the same, and to make other corrections; that he shall remain at his said office from nine till twelve o'clock a. m., from two to five, and from seven to nine o'clock p. m., for the convenience of the public.

(6) The registration officers are urgently requested (and neglect thereof will subject them to removal) to make diligent inquiry and use all reasonable means to ascertain the names which appear upon the registry lists of all persons who have died, or permanently removed from the precinct, or are otherwise disqualified as voters, and to erase all such from the list, it being the earnest wish of the Commission to eliminate from the list the names of all persons who are not residents of the city, and not legally qualified under the law to vote.

(7) Upon the completion of the list the registration officer shall prepare triplicate lists in alphabetical order for each precinct, containing the names of all registered voters, one of which lists shall be filed in the office of the city recorder on or before the second Monday in January, 1890, which will be the 13th day of said month; one list to be posted up in each precinct at least fifteen days before the election (10th February, 1890), at or near the place of election, and the other list transmitted by him to the presiding judge of election of the several precincts for use at the polls, and the oaths or affirmation of the registered voters, immediately after the day of the election shall be delivered to the clerk of the probate court of Salt Lake County.

(8) Prior to the election the city registration officer shall cause to be written or printed a notice which shall designate the office or offices to be filled, and stating that the election will commence at ——— (designating the place for holding the polls), one hour after sunrise, and continue until sunset on the ——— day of ———, 189—.

Dated at Salt Lake City, on this ——— day of ———, A. D. 18—.

Registration Officer.

A copy of which should be posted up at least fifteen days before the day of election, in three public places in each precinct in the city, calculated to give notice to all the voters. It is the duty of the registration officer to give notice on the lists posted as aforesaid that the city registration officer will hear objections to the right to vote of any person registered, until sunset on the fifth day preceding the day of the election. Said objection shall be made by a qualified voter, in writing, and delivered to the said city registration officer, who shall issue a written notice to the person objected to, stating the day, place, and hour when the objection shall be heard. The person making the objection shall serve, or cause to be served, said notice on the person objected to, and shall also make return of such service to the city registration officer before whom the objection is to be heard. In our opinion the objection should specify the grounds thereof and should be made separately as to each person objected to; and actual personal service should be proved by the affidavit of the person making the same, unless service and return thereof be made by an officer authorized by law to serve process, and at least three days, notice should be given. Upon the hearing of the case, if said officer shall find that the person objected to is not a qualified voter, he shall, within three days prior to the election, transmit a certified list of all such disqualified persons to the judges of election appointed by the Commission; and said judges should strike such names from the registry list before the opening of the polls. In view of the numerous complaints that have been made with respect to the working of this provision of the law, the Commission recommends that when a decision is made by the registration officer, striking the name of a person from the list of voters, the fact be made known to him without delay, either orally or in writing.

(9) The Commission being solicitous to secure a perfect registration of the qualified voters of the city, and to prevent, as far as is in their power, all frauds in the election, further suggests as a matter of caution, and with a view to the identity of electors, that the registration officers of the different precincts in the city, at the time of making the registration list, shall enter opposite each name on the list the place of residence of the voter, by street and number, and his occupation; and in all cases of removal from one precinct to another that the residence from which the voter removed shall be entered, as well as the one to which the change is made; and to carry out this suggestion the Commission will furnish to the registration officers books properly ruled for the purpose.

G. L. GODFREY,
Chairman.

On the 21st of August it appointed a registration officer for the city and five deputy registrars for the several voting precincts, and the appointees having accepted, they were invited to and did meet with the

Commission for more full and complete instruction in regard to the terms of the circular, which was fully explained to them, and received the promise of their entire concurrence and hearty support, and the Commission believes that the registration lists prepared by them will be purged as far as the law will permit.

The Commission in previous reports has made certain recommendations which were, in its opinion, necessary and proper to give force and effect to the provisions of the law under which it was created and which had not yet been enacted into law.

These may be summarized as follows:

(1) In regard to the courts. The conferring upon the district courts jurisdiction of all polygamous and sexual offenses without regard to the place in the Territory where committed; investing them with power co-extensive with that possessed by the United States circuit and district courts in the States in the matter of contempt and the punishment thereof; authorizing the process of subpoena to run from the Territorial courts into any other district of the United States; authorizing the selection of jurors by open venire; providing that when continuance is granted on motion of defendant, depositions of witnesses on the part of the prosecution may be taken on notice and used in case the witness be dead, absent from the Territory, or so concealed as to elude the service of subpoena, and that a sufficient fund to enable the prosecuting officers to efficiently perform their duties and enforce the laws be furnished by the Department of Justice to the proper law officers of the Territory.

(2) That prosecutions for polygamy and bigamy be exempted from the operation of the general statute of limitations.

(3) That the term of imprisonment for unlawful cohabitation, fixed by section 2 of the act of 1882, be extended to at least two years for the first and three years for the second offense. The Commission adds to this the recommendation that the term of imprisonment for polygamy, bigamy, and unlawful cohabitation be extended, and that hard labor be added to the punishment.

(4) That it be made a penal offense for any woman to enter into the marriage relation with any man, knowing him to have a wife living, undivorced, coupled, however, with the provision that in cases where a polygamous wife is called as a witness against the husband, her testimony could not be used in any future prosecution against her, and a like provision as to the husband.

(5) The appointment of the Territorial auditor, treasurer, commissioners to locate university lands, probate judges, county clerks, selectmen, assessors and collectors, recorders and superintendents of district schools, by the governor, subject to confirmation by the Commission.

(6) That all persons be excluded by law from making a location and settlement upon any of the public lands who shall refuse on demand to take and subscribe an oath, before a proper officer of the land office in which his or her application is made, that he or she does not cohabit with more than one man or one woman, as the case may be, in the marriage relation, and that he or she will obey the laws of the United States in relation to polygamy and bigamy.

(7) That the laws with reference to the immigration of Chinese, and the importation of contract laborers, paupers, and criminals be so amended as to prevent the immigration of persons claiming that their religion justifies the crime of polygamy.

(8) A Constitutional amendment forever prohibiting polygamy.

(9) The enactment of a law creating a board to consist of the gov-

ernor, Utah Commission, and the secretary of the Territory, to apportion Salt Lake City into aldermanic and councilmanic districts.

The Commission respectfully recommends all these propositions to the attention of Congress, and in addition makes the following recommendations:

(10) Authorizing this commission, in its discretion, to cause to be made annually a new registration instead of revisions of former lists, and to make and enforce rules and regulations not inconsistent with the laws of the United States for the conduct of registrations and elections.

(11) That Congress pass laws for the government and conduct of public schools in the Territory of Utah.

(12) That as soon as the result of the census of 1890 is known, there be created a board consisting of the governor, Utah Commission, and secretary of the Territory with power to redistrict the Territory for legislative purposes.

Some of these propositions are of grave importance, and may provoke much discussion and adverse criticism. Those relating to the practice in the courts will be at once understood by our law-makers, and need no explanation.

The Commission asks power to make a new registration and to enforce rules and regulations regarding the conduct of registrations and elections, not from any desire to increase its duties and responsibilities, but because it believes new registrations to be simpler and better than revisions, and that better results would come from a judicious exercise of such powers if conferred. Under the present laws of Congress it can only recommend a course of action to its registration officers and judges of election, and has a dual set of laws to govern its own actions, the laws of Congress, and the laws of the Territory, and the latter are not always free from questions of doubtful construction, and sometimes stand in the way of beneficial reforms, neither provided for nor inhibited by Congress, but within the spirit and purport of its expressed or known intentions.

In regard to a law establishing and regulating the management of free schools, the Commission is not of the opinion that the legislature of Utah, as likely to be constituted for some time to come, can be expected or trusted to establish a system of free schools in sympathy with the enlightenment of the age, or free from the teachings of polygamy and so-called revelations, and therefore recommend that Congress assume the duty of providing for the education and enlightenment of the youth of the Territory.

The Commission believes the limitation on prosecutions for polygamy and bigamy should be extended, among other reasons, because, under the peculiar missionary service of the church it is easy for one to enter polygamy, go on a mission for three years, and return to assume his polygamous relations, defying the authorities to punish him for the main offense, and be in danger only of prosecution for the lesser offense of unlawful cohabitation. The term of imprisonment for this offense should be increased to meet this state of affairs, and sentence of hard labor should be added, that their confinement may not be spent in idleness and glorification of their supposed martyrdom.

The Commission has no doubt that punishment of the woman for voluntarily entering the polygamous relation would do much to lessen her zeal for the peculiar institution, and thus tend to remove one of its strongest bulwarks.

It recommends the granting to the governor the power to appoint the officers named, because—

(1) He is more nearly than any other the representative of the power and majesty of the Government among the people of the Territory, and granting powers to him which will bring him more and more into direct contact with them would tend to increase their respect for the National Government, an element almost unknown among them.

(2) Because residing among them, he can better judge of the necessities of the case and of the qualifications of the officers to be appointed than would be possible if the appointing power should be vested in the President.

(3) Because such power would take the control of Utah affairs out of the hands of officers who are chosen, not by a free selection of the people, but whose nomination is made by "counsel" from the priesthood, and whose election is a mere form, and place it in the hands of men who represent civilized ideas, are in sympathy with the efforts of Congress to suppress polygamy, and will assist the officers of the Government in the work of enforcing the laws, instead of using all the influence and moral support of their positions to nullify the laws, prevent their execution, and shield offenders, as is now the rule and practice.

In regard to the proposed amendment of the immigration laws and the restriction upon the location of public lands the Commission respectfully submits, that while we forbid the immigration of the non-proselyting, peace-loving, docile Chinaman, because we fear a future danger from his coming, while we forbid the landing on our shores of contract laborers, because they cheapen wages of American-born citizens, and paupers, because they may become a burden, there is far greater reason for closing our doors as a nation, and forbidding citizenship to the hordes who are brought here to swell the ranks of an organized body, which teaches them in advance to hate the Government of the United States, denominates its executive, law-makers, judges, and prosecutors as persecutors, and instills into every mind the constant teaching that their pretended revelations are more binding than the highest and best laws of the land, and that resistance to such laws is a virtue and a rendering of obedience to God. How far short of treason these teachings are we leave those who can to answer. By cutting off this importation of generally ignorant and fanatical classes, many of whom neither speak nor care to learn our language, and to say the least are not in sympathy with the institutions or the laws of our country, the principal source of the growth of this conspiracy against what we hold as best and dearest in American civilization would be materially diminished, and the spread of this relic of Oriental barbarism to that extent averted.

The Commission would further suggest, for the careful consideration of Congress, the propriety and expediency of enacting laws providing for the disfranchisement of such persons who may not themselves be guilty of crimes forbidden by law, but who are or may become members of organizations or societies whose tenets and principles are inimical to the Constitution and laws of the country, and teach that the practice of certain criminal acts are virtues, and throws about its members who do practice such crimes the shield of the whole power of such organizations, morally, socially, and otherwise, and to debar them from the privileges of the homestead laws. The Commission does not strenuously urge such legislation at this time, partially because the Supreme Court has not yet passed upon the constitutionality and legality of such enactments.

The Commission yields to none in reverence for and earnest desire to protect from violation every provision of that instrument, sacred to every true American citizen as the palladium of his liberties and the great safeguard of the Republic, but it is not of the opinion that laws made to prevent crime, to prevent combinations and conspiracy against the State, and to punish persons who combine and conspire to commit crime can be called laws which interfere with religion, whether the persons who so combine and conspire call themselves by the name of the Church of Jesus Christ of Latter-Day Saints or by any other name, whether they pretend that their conspiracy is a religion or openly declare their object to be to commit crime.

Religious fanaticism even can not be allowed to commit crimes against the law or to teach others to do so, either by the acts of the individual or an organization composed of many individuals, whether they avow that they act voluntarily or under a pretended spiritual revelation.

The law aims at the crime against society, no matter by what name it is called, or in what guise it is perpetrated. The man who robs you in the guise of a Samaritan is no less a robber because of his disguise.

It may not be considered out of place to mention the fact that similar views to those above expressed have received the sanction and approval of the supreme court of Idaho in deciding the appeal in the case of *Dooley vs. Watkins et al.*, a case in which the principles involved in the suggestion of the Commission are ably discussed.

The Commission desires to commend the governor, the judges, and district attorney and assistants of the Territorial district courts, and the officers of the United States generally for Utah, for the intelligent, zealous, and faithful manner in which they have performed their difficult and sometimes arduous and distasteful duties in enforcing the laws of Congress, and for the willing and efficient aid they have given the Commission upon all occasions. The utmost harmony exists among all the Government officials in the Territory, so far as is known to the Commission.

In concluding, the Commission is of the opinion that in this matter the Government and Congress should take no backward or even wavering step, but should continue the active and vigorous enforcement of the laws, and the improvement of them by the amendment of such as would be made more effective thereby, and by enacting such other laws as experience may show to be wise and more efficacious to accomplish the desired end, until not only the practice but the inculcation of crimes of this nature shall, as far as possible, be stamped out, and until a majority of the people shall abandon a pretended belief in doctrines which incite to treason against the state, which sap the foundations of society, and retard the growth of nineteenth-century civilization, and until they show that they can be trusted to make and enforce laws which forbid the practices elsewhere universally condemned.

Very respectfully submitted.

G. L. GODFREY, *Chairman.*
A. B. WILLIAMS.
R. S. ROBERTSON.
ALVIN SAUNDERS.

Hon. JOHN W. NOBLE,
Secretary of the Interior, Washington, D. C.

SEPARATE REPORT OF JOHN A. MCCLERNAND.

CHICAGO, ILL., *September 23, 1889.*

SIR: While I readily acknowledge the marked ability exhibited by my official associates in their majority report, and while I concur in parts of their report, yet, as I non-concur in its general animus, particularly in its treatment of the distinction between opinions and actions as subjects of legislative punishment, I have deemed it proper, with the leave of my associates, in order to a clear and consistent exposition of my views on the Mormon question, to offer this separate statement of them.

The Utah Commission was created by a law of Congress, approved by President Arthur, March 22, 1882, who, pursuant to its provisions, appointed five persons representing different political parties to constitute it. These persons were appointed from the States rather than from the Territory of Utah, presumably upon the ground that appointments from the States would be least likely to be influenced by the passions and prejudices which have so long disturbed the Territory. The example thus set by President Arthur has hitherto been followed. The only changes made in the personal of the Commission have resulted from appointments made to fill vacancies caused by death or resignation. There has been no instance of removal.

It is evident that the population of the Territory is steadily increasing. As a confirmatory fact it may be stated that the registered voters were:

In 1887.....	19,720
In 1888.....	24,925
In 1889.....	31,201

Since the date of the Commission's last annual report there have been, under the laws, 21 elections in the Territory. At these elections there were 362 persons elected; namely, 1 delegate to Congress, 3 commissioners to locate university lands, 36 members of the legislature, 78 county officers and 244 precinct officers. In connection with these elections the Commission appointed, under the law, 368 registrars of voters, 1,284 judges of elections, and a board for the canvassing of the returns of the elections, which was conducted either directly by the Commission or under its careful supervision. The elections in the two principal cities, Salt Lake and Ogden, showed by their returns a shifted majority in favor of the non-Mormons.

Indulging some general reflections upon the divine economy as affecting the relations of the sexes, I would premise that that economy authoritatively teaches and exemplifies the virtue of order and uniformity, the foundation of the social relations and of civil government. In harmony with that economy, God originally created man and woman, and according to the biblical account, originally created but one man and one woman, Adam and Eve, sole companions of each other in wedlock.

According to the same account, Eve was taken from the side of Adam, as bone of his bone and flesh of his flesh.

Upon this postulate, accepted by the Christian church, it may be stated as a matter of curious history, that one of the early reformers of that church, since canonized for his wisdom and piety, argued that as Eve was not taken from Adam's head, neither from his feet, therefore she was not designed to be either his master or his slave, but as she was taken from his left side and from near his heart as the center of life, therefore she was divinely ordained to be his heart-mate and help-mate, his companion and equal.*

The law of generation and population imports the same conclusion, as the operation of that law, under ordinary conditions has, everywhere and at all times, been to produce approximately equal numbers of both sexes, male and female.

The civil law, following the natural and the moral law, likewise treats the woman, except in the arena of contention and publicity, as the equal of the man. It renders each alike amenable to its penalties, and vouchsafes to each the same remedies and redress for injuries and wrongs to person, property, or reputation. It is equally the sword and shield of both.

The marriage covenant follows in the same course which, above all others, is hallowed by time and opinion, by religion and by law. It is couched, on the part of the man, in these solemn and comprehensive terms:

I will take this woman for my wedded wife, to live together after God's ordinance in the holy estate of matrimony. I will love her, comfort her, honor her, and keep her in sickness and in health, and forsaking all other, keep myself unto her so long as we both shall live.

No covenant could be more searching and specific. It bears the double sanction of God and man, and expressly binds the conscience and honor of the husband to its scrupulous and faithful fulfillment. Is it so fulfilled if the husband divides his marital attentions and indulgence between a harem of wives or concubines passing under what name soever? Does he, in that case, manifest true love for his legal and rightful wife? Does he, in that case, honor her, comfort her, and forsaking all other, keep himself unto her? On the contrary he tramples upon his plighted faith, inflicts discomfort and dishonor on her, outrages her womanly instincts, and degrades himself. Nor is it sufficient to answer that she consents, since her consent is insidiously but irresistibly constrained by her associations and surroundings, these serving to dominate her will, to blunt her sensibilities, pervert her understanding, and to virtually enslave her mind and body. As well might it be answered that the consent obtained by undue influence or by duress shall stand against him who is its constrained victim.

Woman's appointed mission is not that of a mere drudge, or merely to adorn man's leisure or to gratify his animal lust. It ranks far higher—comprehensively contemplating her as a companion, the mistress of the home, and the mother of offspring, and in that capacity charged with all the grave and momentous responsibilities arising out of these manifold relations. In brief, she exists for herself as well as for others, and to prepare her to conserve efficiently the happiness of both, she needs early and fitting moral and intellectual culture, training, and discipline. With these she is clothed with an armor against deception and imposture; from these she derives a becoming self-confidence and

* St. Augustine de Civitate Dei.

self-reliance, and, withal, a practical aptness in managing the economies of the home, her natural empire and state.

As mother, she bears her children in sorrow and travail, carries them with trembling arms, in a reaction of bliss, to her breast to nurture them of her strength and sustenance, nurses them in their infancy, follows them with her solicitude, and molds their temper, habits, and character after her own model. If she is intelligent, orderly, and moral, they, by force of her example, will be inclined to be so. If she is coarse, ignorant, and impure, their tendency will be likewise. "As the fig tree looking upon the fig tree becometh fruitful," "so the child looking upon the mother will come to image her." "Give a child to be educated by a slave, and instead of one slave you will have two." "Childhood forecasts the man, as morning shows the day."

It is in childhood those impressions are received which sink the deepest and last the longest. It is then the germs of virtue or vice are implanted, which mature in goodly fruit or deadly thorns; which give shape and color to man's destiny. Napoleon I. deduced from the French revolution of the last century, which mocked female virtue and conjugal fidelity and culminated in the wreck of society and the state, the veracious moral that the need, the great need, of France was orderly homes and self-respecting women.

The mother is the divinely-appointed providence of the human race. From her issue the family and successively the *gens*, the tribe, the people, and the nation. She rules through her affections, the man through his intellect; but as a matter of fact the dominion of the heart is more expansive and enduring than the dominion of the brain. Tersely, in proportion as the mental and the moral qualities of the sexes are developed, so will society, the state, and mankind be improved and elevated. Therefore, the higher education of the woman is as imperatively called for as the higher education of the man.

Companionship in marriage has much to do in assimilating female character. If the husband is ignorant, coarse, and sensual, his association will tend to drag his wife down to his level. If he is oblivious of the claims of virtue, she will hardly be disposed to properly value them, and so, by the example of both, the home and the family will be infected.

The moral law, as we have seen, is no respecter of persons. It applies equally to both sexes. What it condemns in the one it also condemns in the other. Condoning the incontinence of the man, and dishonoring the woman for her incontinence, or treating her simply as a unit in a miscellany of wives or concubines is not only unjust and tyrannical, but subversive of good order and society. On the other hand, as the most noble and useful qualities of the woman shine through her affections, her affections deserve to be sympathetically nurtured, honored, and protected. "Without the paternity and consecration of the private and domestic virtues, civic virtues are but an affectation and a sham."

Recapitulating with brief addition: Polygamy is contrary to the divine economy; contrary also to the moral law and to enlightened opinion. It breeds caprice, cruelty, and license. It enervates the man and debauches the woman. Physically, socially, and morally it deteriorates and corrupts. Despotism in the family, it prototypes and engenders despotism in the state. Perforce it works its own retribution, and so it accounts for the unequal development of the Asiatic and European races; for the indolence and feebleness of the one; for the enterprise and energy of the other. Incapacity and inferiority are its label and condemnation. Hence, in the armed contests of rival civil-

zations, notably in ancient Greece and modern India, it succumbed to the characteristic valor and vigor of represented monogamy.

Following the example of the wisest and most progressive nations, and with them holding fast to the altar of individual purity and self-restraint, as the imperative condition to national esteem, strength, and prestige, the United States have placed the seal of condemnation upon polygamous practices everywhere within the domain of their exclusive jurisdiction. The relevant laws enacted by Congress are numerous and cover a period of nearly forty years. To assist to an easy and ready apprehension of their purport, I subjoin here substantially their pertinent provisions and their familiar popular titles:

The act of 1862 declares, as a rule, that any person having a husband or wife, who shall marry any other person, whether married or single, shall be adjudged guilty of bigamy, and upon conviction thereof, by a jury, shall be punished by fine not exceeding \$500, and by imprisonment not exceeding five years. (Sec. 1.)

The "Poland act" of 1874 provides that in all criminal cases the court and not the jury shall pronounce the punishment under the limitation prescribed by law and withholds from each party more than three peremptory challenges in any criminal case except murder. (Sec. 4.)

The "Edmunds act" of 1882 is more comprehensive, yet more minute. It declares polygamy and unlawful cohabitation severally to be offenses, and defines what shall constitute each; annexes to the one the same penalties enacted by the act of 1862, and to the other a fine not exceeding \$300, or imprisonment not exceeding six months, or both, in the discretion of the court; and allows a joinder of counts for polygamy and unlawful cohabitation in the same information or indictment. (Secs. 1, 3, 4.)

Disqualifies any person from serving as a juror in any prosecution for polygamy or unlawful cohabitation, who is living or has lived in the practice of bigamy, polygamy, or of unlawful cohabitation with more than one woman, or who believes it right for a man to have more than one living and undivorced wife at the same time, or who believes it right to live in the practice of cohabitation with more than one woman, if such person shall be challenged as a juror for any such cause. (Sec. 5.)

Authorizes the President to grant absolute, conditional, or limited amnesty to offenders against either of the above-named acts. (Sec. 6.)

Legitimizes the issue of polygamous marriages solemnized according to the ceremonies of the Mormon sect, who were born before the 1st day of January, 1883. (Sec. 7.)

Disqualifies any polygamist or other person cohabiting with more than one woman from voting at any election, or for election or appointment to any office of trust, honor, or emolument. (Sec. 8.)

The "Edmunds-Tucker act" of 1887, extending the purview of the previous acts, defines other crimes and misdemeanors with their penalties, namely:

Incest, punishable by imprisonment in the penitentiary not less than three nor more than fifteen years. (Sec. 4.)

Adultery, punishable by like imprisonment not exceeding three years. (Sec. 3.)

Fornication, punishable by imprisonment not exceeding six months or by fine not exceeding \$100. (Sec. 5.)

Waives, in any prosecution for bigamy, polygamy, or unlawful cohabitation, the process of subpoena, for sworn cause, for the process of attachment, instead, to the witness. (Sec. 2.)

Qualifies the lawful husband or wife, each, with his or her consent, to

testify as a witness touching the other, in any prosecution for bigamy, polygamy, or unlawful cohabitation, except as to any statement or communication made by either deemed at common law confidential. (Sec. 1.)

Requires every celebration of marriage performed in Utah to be signed by the parties thereto, and by every priest or other person taking part therein, and that the evidence of marriage when so authenticated shall be filed in the office of the probate court for record, and that such record shall remain subject to inspection, and punishes any willful violation of the requirement by fine not exceeding \$1,000, or by imprisonment not exceeding two years, or by both, in the discretion of the court. (Sec. 9.)

Vests in the commissioners who are or may be appointed by the supreme court or district courts in the Territory the same powers and jurisdiction possessed by the justices of the peace therein, or by the commissioners appointed by the circuit courts of the United States. (Sec. 7.)

Continues the powers and duties of the Utah Commission until it shall have been superseded by the legislative assembly of the Territory with the express approval of Congress. (Sec. 23.)

Abolishes the right of female suffrage for any public purpose (sec. 20), and limits the right of male suffrage by the precedent condition that such person shall have registered his name as a voter and subscribed an oath or affirmation that he is over twenty-one years of age; has resided in the Territory six months and in the precinct of his residence one month—including in such oath or affirmation a statement, according to the fact, that he is a native-born or naturalized citizen, of his age, his place of business, his status, whether single or married, and if married, the name of his lawful wife; that he will support the Constitution of the United States and faithfully obey the laws thereof, and especially the act of 1882 and this act in respect to the crime therein defined and forbidden, and will not, directly or indirectly, aid or abet, counsel or advise any other person to commit any of said crimes. (Sec. 24.)

Disqualifies any person to serve as a juror or to hold any office who shall not have first taken an oath or affirmation setting forth his full name, his age and place of business, his status, whether single or married, and, if married, the name of his lawful wife, and that he will support the Constitution of the United States and obey the laws thereof; or who shall have been convicted of any crime under the act of 1882 or this act. (Sec. 24.)

Regulates and secures the right of dower (sec. 18); makes the judges of the probate courts appointive by the President, by and with the advice and consent of the Senate (sec. 19); requires the governor and the secretary of the Territory, with the Utah Commission, to redistrict the Territory into representative and councilor districts, and to apportion the representation of the people of the Territory in proportion to their numbers and the number of the districts and of the members of the present legislative assembly. (Sec. 23.)

Provides the agencies and mode of forfeiting and escheating to the United States, for the use of common schools, the property of corporations obtained or held in violation of the act of 1862, except buildings, with their appurtenant grounds, held and occupied exclusively for the worship of God, or for the parsonages connected therewith, or for burial places. (Secs. 13, 14.)

Disapproves and annuls all laws of the legislative assembly of the Territory, or of the so-called State of Deseret, creating, organizing,

amending, or continuing the corporation called the Perpetual Emigration Company, and, dissolving it, provides the mode and agencies of adjudging its dissolution and of carrying the same into effect. Forbids the assembly from passing any law operating to bring persons into the Territory; and escheats the property and assets of the corporation, in excess of its lawful liabilities to the United States for investment and disposition, by the Secretary of the Interior, for the benefit of common schools in the Territory. (Secs. 15, 16.)

Disapproves and annuls all acts of the legislative assembly of the Territory; also the ordinance of the so called state of Deseret incorporating, continuing, or providing for the corporation known as the Church of Jesus Christ of Latter-Day Saints; disincorporates and dissolves that corporation; vests the supreme court of the Territory with equity power to wind up the affairs of the corporation conformably to law, and to carry all these provisions into effect, and, in so doing, to cause to be transferred to trustees, for the use of the corporation, the real estate now held and used by it for places of worship, and for parsonages connected therewith, and for burial grounds, subject to the limitation imposed in that regard by sections 13 and 26 of the act. (Secs. 13, 17, 26.)

Suspends the laws of the Territory providing the method of electing and appointing the Territorial superintendent of district schools; abolishes the office of such superintendent, and makes it the duty of the supreme court of the Territory to appoint a commissioner of schools, clothed with the same powers and charged with the same duties appertaining to the Territorial superintendent under the laws of the Territory; clothed also with the power to prohibit the use of any book of a sectarian character or otherwise unsuitable in any district school; and charges him also with the duty of reporting annually to Congress, through the governor of the Territory and the Secretary of the Interior, concerning the number of children of school age, the proportions attending and not attending school, and generally of the progress of the schools and the operation of his office. (Sec. 25.)

It annuls all laws passed by the so-called state of Deseret or by the legislative assembly of the Territory for the organization of the militia or the creation of the Nauvoo Legion, and provides that the militia of Utah shall be organized and subjected in all respects to the laws of the United States, and that the governor of the Territory, by and with the advice and consent of the council thereof, shall appoint all general officers of the militia, until, as further provided, the assembly shall have passed other laws for organizing the militia, subject to the approval of Congress.

These laws are far-reaching and stringent. They bespeak an unusual remedy for an obstinate and formidable evil. They extend to all offenders convicted of violating them not only the penalty of fine and imprisonment, or both, but forfeiture of the elective franchise and eligibility to hold office or to perform jury service. More than that, they cautiously require, even of non-offenders, a test oath involving divers unusual precedent conditions to the exercise of the elective franchise or to the holding of office or serving as a juror.

Now, have these laws proved uniformly and effectively remedial? Facts and enlightened opinion should afford the best answer. From the date of the act of 1862 to 1875, nearly thirteen years, there does not appear to have been a single conviction for bigamy or polygamy, although in that time these crimes were rife; and it is scarcely less remarkable that from 1875 to 1884, eight more years, there appears to

have been but two convictions, totalizing only that number of convictions for twenty years.

Again: Why this absence or paucity of conviction for so long a period? The explanation derived is that the courts were generally considered powerless to reject a juror on challenge for religious bias as to the issue, or to summons a provisional jury to find indictments or verdicts which the regular jury had rejected or otherwise improperly failed to find.

The effect of this assumption was confusing to the courts and obstructive to the course of justice. It contributed to strengthen and confirm the belief of the Mormons, that polygamy as a tenet of their religion was intrenched by the Federal Constitution, and was therefore inviolable to any law that Congress was competent to pass, and so encouraged and emboldened them in persistent polygamous practices. But later the assumption was overthrown; in the one case by the Supreme Court of the United States;* in the other, by a district court of the Territory,† which asserted the reasonable doctrine that it belonged to the inherent power of the court to provide itself with the agency of a jury when it became necessary in order to the fulfillment of its functions.

These rulings opened the way for the actions of the laws to correct a misapprehension which then appeared to be common to the local majority. Twenty-one convictions for bigamy or polygamy followed in the six years succeeding 1883, whereas there were but two convictions occurring in the twenty years preceding 1884. This disparity is the more notable inasmuch as these offenses have been decreasing since the enactment of the Edmunds law of 1882. The statement is significant as illustrating the vigilance and vigor with which the laws prohibiting polygamy have been executed for the last six years.

The greatest number of convictions had for sexual offenses since 1883 was for unlawful cohabitation, a misdemeanor created and made punishable by the act of 1882, which was presumably designed, at least in part, to prevent the actual survival of the polygamous relation after the statute of limitations barred a prosecution for it, in form, as polygamy. And here it may be pertinent to inquire whether, as polygamy is in fact an offense against society and not merely a breach of a valid marriage contract, it should not be liable to punishment as long as the sexual relation it implies actually exists? To shield it by a limitation applicable to a civil contract is a waiver of that liability, and is, in a logical sense, inconsistent. To spare that punishment because it has grown chronic and contumacious is to encourage it. For the stronger reason, in that case it should be punished, and the more severely.

Among the people of northern and western Europe, as well as among the people of the United States, polygamy as an institution or practice has always been odious. Until its introduction here by the Mormons it had been regarded as appertaining almost exclusively to the Asiatic and African marital and social condition. Certainly before that time it had no other than a sporadic and fugitive existence in our land.

From the earliest history of England, the mother country, the offense was treated as one inimical to the well-being of society, and a statute of James I. denounced it as a felony punishable with death, if committed in England or Wales. In 1788 Virginia re-enacted substantially the same statute, including the death penalty, and since then it may

* Reynolds v. U. S., 98 U. S., 162.

† Judge Zane sitting.

be safely affirmed that there has never been a day in any State in the Union when polygamy was not cognizable as a crime by the civil courts and was not punishable with more or less severity.

Recurring to the subject of actual decline of polygamous offenses, as already noticed, it is proper to remark that that fact carries with it a pregnant and welcome moral significance. It means the birth of a reformatory spirit and its advancing development. This truth is variously evidenced.

Five or more years back the leading anti-Mormon journal in Utah, the Salt Lake Tribune, bore this testimony :

Salt Lake City is so changed from the Utah of ten years ago that, could the old state of affairs be restored for a week, the old slavery, the old tyranny, and the restrictions, the Mormons themselves would rise up in rebellion. There are forces at work in Utah which are all-powerful and which no artifice or restriction, no falsehood, and no superstition can resist.

In 1887 a convention of delegates, chosen with singular unanimity by the Mormon voters of Utah, framed and composed a constitution of government, under which the admission of Utah, as a State, into the Federal Union was prayed. It incorporated as a part of it the following provisions :

ART. I, SEC. 3. There shall be no union of church and state, nor shall any church dominate the state.

ART. XV, SEC. 12. Bigamy and polygamy being considered incompatible with a republican form of government, each of them is hereby forbidden and declared a misdemeanor.

Any person who shall violate this section shall, on conviction thereof, be punished by a fine of not more than one thousand dollars, and imprisoned for a term of not less than six months nor more than three years, in the discretion of the court. This section shall be construed as operative without the aid of legislation, and the offense prohibited by this section shall not be barred by any statute of limitations within three years after the commission of the offense, nor shall the power of pardon extend thereto until such pardon shall be approved by the President of the United States.

ART. XVI, SEC. 1. Any amendment or amendments to this constitution, if agreed to by a majority of all the members elected to each of the two houses of the legislature, shall be entered on their respective journals, with the yeas and nays taken thereon, and referred to the legislature then next to be elected, and shall be published for three months next preceding the time of such election; and if, in the legislature next elected as aforesaid, such proposed amendment or amendments shall be agreed to by a majority of all the members elected to each house, then it shall be the duty of the legislature to submit such proposed amendment or amendments to the people in such manner and at such time as the legislature shall prescribe, and if the people shall approve and ratify such amendment or amendments by a majority of the qualified electors voting thereon, such amendment or amendments shall become a part of the constitution: *Provided*, That section 12 of Article XV shall not be amended, revised, or in any way changed until any amendment, revision, or change, as proposed therein shall, in addition to the requirements of the provisions of this article, be reported to the Congress of the United States and shall be by Congress approved and ratified and such approval and ratification be proclaimed by the President of the United States, and if not so ratified and proclaimed, said section shall remain perpetual.

Not only were these provisions incorporated in the proposed constitution, but they were submitted with it for adoption or rejection by the qualified electors of the Territory at the general election in the ensuing August. The returns of the election showed 13,195 votes in favor of the constitution and only 504 against it.

Now, whether these provisions, as restrictions upon the right of local self-government and as calculated to produce a condition of political inequality among the States, are consistent with the rights of the States and the Constitution of the United States, and whether, therefore, it would be competent to admit Utah under her proposed constitution, are grave questions of constitutional law, determinable only by the highest appropriate civil authority.

In August, 1887, Hon. Charles S. Zane, judge of the third district court, and chief-justice of Utah, answering certain relevant questions, said that, in his opinion, the then existing laws diligently and strictly enforced, might be reasonably relied on to work the cessation of polygamous practices, and that no case of polygamy coming under his judicial notice had originated in the commission of that crime since the date of the Edmunds-Tucker act. And the late Hon. William G. Bowman, then Surveyor General of the United States for the district of Utah, substantially corroborated the foregoing statement as to the efficacy of the laws.*

While the act of 1882 disqualifies any polygamist or other person cohabiting with more than one woman for election or appointment to any office or place of trust, honor or emolument, the act of 1887, extending further, requires as a precedent condition to the exercise of the elective franchise, that the elector shall take an oath which may be described as a test of loyalty to the United States and obedience to its laws.

This oath was formulated by the Commission in adherence to the language of the act as closely as practicable. It is as follows:

TERRITORY OF UTAH, *County of* ——— :

I, ———, being duly sworn (or affirmed), depose and say, that I am over twenty-one years of age; that I have resided in the Territory of Utah for six months last past, and in this precinct for over one month immediately preceding the date hereof, and that I am a native born (or naturalized as the case may be) citizen of the United States; and that my full name is ———; that I am ——— years of age; that my place of business is ———; that I am a (single or) married man; that the name of my lawful wife is ———, and that I will support the Constitution of the United States and will faithfully obey the laws thereof, and especially will obey the act of Congress approved March 22, 1882, entitled "An act to amend section 5352 of the Revised Statutes of the United States in reference to bigamy, and for other purposes," and that I will also obey the act of Congress of March 3, 1887, entitled "An act to amend an act entitled 'An act to amend section 5352 of the Revised Statutes of the United States in reference to bigamy, and for other purposes,' approved March 22, 1882," in respect of the crimes in said act defined and forbidden, and that I will not, directly or indirectly, aid or abet, counsel or advise, any other person to commit any of said crimes defined by acts of Congress as polygamy, bigamy, unlawful cohabitation, incest, adultery, and fornication.

Although the person applying to have his name registered as a voter may have made the foregoing oath, yet if the registrar shall, for reasonable or probable cause, believe that the applicant is then in fact a bigamist, polygamist, or living in unlawful cohabitation, or associating or cohabiting polygamously with persons of the opposite sex, or has been convicted of bigamy, polygamy, unlawful cohabitation, incest, adultery, or fornication, in our opinion, the registrar may require the applicant to make the following additional affidavit:

TERRITORY OF UTAH, *County of* ——— :

I, ———, do further swear (or affirm) that I am not a bigamist, polygamist, or living in unlawful cohabitation, or associating or cohabiting polygamously with persons of the other sex, and that I have not been convicted of the crime of bigamy, polygamy, unlawful cohabitation, incest, adultery, or fornication.

It was predicted of this oath by many of the non-Mormons of Utah that the Mormons would not take and subscribe to it, yet with some exceptions, including refusing non-Mormons, the Mormon electors did so. The acceptance of the test by the body of the Mormon electors is here noted as one of the most hopeful tokens of Mormon reform. It implies a split between young and progressive Utah and the old Utah, unhap-

*See Appendix, Notes B and C.

pily still surviving in individual instances of incorrigible fanaticism and fatuity.

To the objection made by a committee composed of leading non-Mormons, that the oath as formulated was not sufficiently comprehensive and searching, the commission answered that it was according to the law and fulfilled it.

The local municipalities of Utah comprise no inconsiderable portion of its population. Formerly, under the Territorial law, the aldermen and councilmen of these municipalities were elected by the voters at large of the municipalities. The result was that the Mormons, being in the majority, elected all their candidates and controlled the municipal administrations. This provoked complaint by the non-Mormons, especially in Salt Lake City, where they contributed largely in taxes to the municipal revenue. To satisfy this complaint the Mormons of that city proposed the election of a fusion ticket of Mormons and non-Mormons for the city at the then pending election. The proposal was accepted by some of the non-Mormons, but was rejected, perhaps by a considerable majority of them. What was thus in this case personally and provisionally arranged was shortly afterward followed by an act of the legislative assembly authorizing local representation in municipal government by means of separate precinct or ward elections.*

At the same session of the legislative assembly, 1888-'89, various laws were passed manifesting a quickening and intelligent appreciation of social and civil responsibility and duty. Among them is a law to punish and prevent gaming; a law auxiliary to the laws enacted by Congress to prevent by severe penalties crimes against the elective franchise and to secure the purity of the ballot-box; a law to equalize taxes; a law enlarging and improving the accommodations of an insane asylum; a law establishing an institution for deaf mutes; a law requiring among other conditions to the sale of intoxicating liquors payment of a license tax of not less than \$600 nor more than \$1,200, and limiting the life of the license to one year; a law for acquiring Territorial fair grounds, and for erecting suitable buildings thereon; a law to establish an agricultural college with an experimental appendage, and a law in aid of an orphans' home.†

Besides these laws, the same assembly passed a joint resolution pledging its adherence to the laws of the United States penalty prohibiting polygamy and other sexual offenses. It is in these words:

This assembly are in favor of a just, humane, and impartial enforcement of said laws * * * in the same manner that other criminal laws are enforced, under the Constitution and laws of our country, to the end that such offense may be efficiently prohibited.‡

This resolution as an authentic expression of the Mormons of Utah, through their chosen representatives, upon a long-controverted question, challenges especial attention as an auspice of reconciliation and submission to authority.

On the same general line the assembly passed a law, elaborately and lucidly developed, "regulating marriage" and apparently anticipating every condition which should tend or operate to validate or invalidate the marriage contract.§

The Utah of to day is peaceful and prosperous. Personal and property rights are secured by wholesome laws properly enforced. Taxes

* Act for incorporation of cities, March 8, 1888.

† Session Laws, 1888, pp. 10, 15, 49-55, 77, 82, 193, 209, 215, 222.

‡ Session Laws, 1888.

§ See Appendix, Note D, for literal or substantive extracts of the law.

are light in the rural districts, and comparatively light even in the larger incorporated cities. Exemplary sobriety prevails as the rule, and industry is active alike among the non-Mormons and the Mormons. The mountains are pierced by the pick and the drill for the outflow of their treasures of gold and silver, of copper and lead, and of coal and iron, while their ridges and sides are roamed by thronging herds of sheep, cattle, and horses, which graze their herbage and grasses and grow fat. The valleys are shedding their tangled brakes of sage-brush for comely fields of wheat and rye, of barley and oats, or for vines and orchards bearing delicious fruits.

The esculent Irish potato grows well, and for its size and excellence is in request in San Francisco, Denver, Chicago, and even foreign markets. Of the domestic grasses, the alfalfa (Lucerne) grows the most luxuriantly, yielding several crops in the same season, while the hay yield of timothy is fair and of fine quality; but conditional to all these productions is artificial irrigation by means of canals and ditches costing much labor and painstaking.

Salt Lake has become a popular resort for bathing and sanitation, and for several years waters drained from it into near depressions have been reduced by solar evaporation to crusted salt, finding in large quantities profitable markets in the mining districts. Salt Lake City, the capital of the Territory, contains a population of 30,000 or more, with many fine and costly public and private buildings, and visited annually by multitudes of tourists from different parts of the United States and Europe, has become eminently cosmopolitan. Ogden is a busy and rising commercial center, reaching by rail to the far East, West, North, and South. Provo, overlooking Utah Lake and the Jordan River, is an extensive market for raw wool and the seat of an extensive manufactory of plain and fine woollen goods, capable of competing in the most critical markets of the country. Withal, there is a university of learning, a system of public schools, and private academies of different religious denominations.

This is a sketch of the Utah of to-day. Contrasting it with the wild, rude, mountain-buttressed seclusion of the Utah of thirty years ago, with the fanaticism, violence, and terrorism of that period, how striking, even marvelous, the metamorphose:

Look on this picture and on this.

But to say that this change is solely the effect of the enactments of Congress is inaccurate and misleading. True, these enactments have effected much, yet it has been mines, mills, smelters, railroads, and the press, in short, the accumulating and intensifying agencies and energy of general progress and improvement, educational and material, which have added alike to their persuasion and force.

Still, a report of recent date came to the Commission from some of its appointees as registrars that they had information reasonably leading them to believe that 29 persons had entered into polygamy from June, 1888, to June, 1889. A report of about the same number of alleged offenders was made last year, both and all such reports being made under an early rule of the Commission tacitly waiving the publication or reference of such reports to the law officers of the Territory, and so lessening their usefulness or value as against crime. Howbeit, as to the fact reported, there have been only six convictions for bigamy or polygamy, according to the report from the district judges, in the last year and so far in the present year; still it is possible, nay in some measure probable, that the reports are true. Indeed, it would be strange if

they were not. A radical reformation of ideas, habits, especially of religious opinions, always incurs the friction of disagreement; yet, if armed with right and justice, it will roll on irresistibly to its fulfillment. This is the normal law of reformation or revolution both in church and state. Concurrently the laws should be inflexibly enforced. No step backward should be tolerated.

On the other hand the Mormons, qualified under the law to vote and hold office, complain that the Commission, from the first, has uniformly excluded them from appointment as registrars wherever qualified non-Mormons could be found willing to accept. And they complain that in that way, contrary to the letter and intent of the law, and to a policy promotive of reform, they have been discriminatively and invidiously proscribed for no other cause than their religious opinion.*

Finally, the local discussion of particular laws is resolving itself into an abstract discussion of the respective limits of the civil and ecclesiastic authority of the immunity of opinion and the responsibility of acts. The discussion, taking this form, involves an old question, which, debated for generations by speech, by the pen and the sword, issued in a conclusion more theoretic than consistently practical. The conclusion, generally stated, is that the legislature, within its organic competency, is the primary judge of what concerns the temporal welfare of the individual, of society, and the state, and that its judgment in that respect, within its organic competency, is exclusive and determinate.

On the other hand, the conclusion is that opinion, or belief, whether religious or secular, is a natural and inalienable right, sacred against legislative coercion or intrusion. It is in virtue of this recognized distinction that the laws enacted by Congress, penally prohibiting sexual offenses, have been upheld by the Supreme Court of the United States,† and that the laws, either temporal or spiritual, punitive or coercive of opinion, have been adjudged void. This is the distinction of reason and right—the distinction crystallized and made salient in our constitution of government, and cherished as the apple of the eye by the American masses.

Jefferson said "that the opinions and belief of men depend not on their will, but follow voluntarily the evidence proposed to their minds; that Almighty God hath created the mind free, and manifested His supreme will that free it shall remain by making it altogether insusceptible of restraint; that all attempts to influence it by temporal punishment or burdens, or by civil incapacitations, tend only to beget habits of hypocrisy and meanness, and are a departure from the plan of the holy Author of our religion;" that our civil rights have no dependence on our religious opinions any more than on our opinions in physics or geometry; "that the opinions of men are not the object of civil government."

Madison sententiously said: "Religion, or the duty we owe to the Creator, is not within the province of civil government."

Hamilton said: "If the legislature can disfranchise any number of citizens at pleasure by general descriptions, it may soon confine all the voters to a small number of partisans and establish an aristocracy or oligarchy. If it may punish at discretion all those whom particular circumstances render obnoxious, without hearing or trial, no man can be safe, or know when he may be the innocent victim of a prevailing

* See Appendix, Note E.

† *Murphy v. Ramsey*, 114 U. S., 15, 44.

passion. The name of liberty applied to such a government would be a mockery of common sense."

Five States, while adopting the Federal Constitution, proposed amendments. Three—New Hampshire, New York, and Virginia—included, in one form or another, a declaration of religious freedom in the changes they desired, as did also North Carolina, whose convention at first declined to ratify the Constitution until the proposed amendments were acted upon. Hence, answering these and other expressions of States, statesmen, and the people, the Constitution in its original text, and in its amendments, was adopted, the object of its adoption being, as declared in its preamble, to "secure the blessings of liberty to ourselves and posterity." As vital to that end, the original Constitution provides that "no religious test shall ever be required as a qualification to any office or public trust under the United States;" and Article I of the amendments declares that "Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech or of the press."

The Supreme Court in expounding and applying certain of these provisions, in its opinion delivered by Chief-Justice Waite, makes plain the distinction between opinion as a mental act and the outbreak of opinion as a physical act, injurious to society and prohibited by law. The court says:

Laws are made for the government of actions, and while they can not interfere with mere religious belief, they may with practices. * * * Congress can not pass a law for the government of the Territories which shall prohibit the free exercise of religion. The first amendment to the Constitution expressly forbids such legislation. Religious freedom is guarantied everywhere throughout the United States so far as Congressional interference is concerned.*

The Edmunds act of 1882, in unison with this judicial exposition, declares that the Utah Commission "shall not exclude any person otherwise eligible to vote from the polls" or "refuse to count any such vote on account of the opinion of the person casting it on the subject of polygamy or bigamy." (Sec. 9.)

In conformity with these canons, thus variously propounded, the Commission has from time to time officially assured the Mormon people domiciled in Utah that the Government of the United States had no design to coerce them for their church membership, or their religious opinions, and that all that was required or could be rightfully required of them was to obey the laws.

In the Commission's first annual report, 1882, it said:

The legislation of Congress as we understand it is not enacted against the religion of any portion of the people of this Territory. The law under which we are acting is directed against the crime of polygamy.

In its report of 1883 it said that—

By abstaining from the polygamic relation they [the Mormons] will enjoy all the political rights of American citizens.

In its report of 1886 it said:

We recognize the obligation of the Government of the United States to protect the personal and property rights of the Mormon people, and to deal with them as equals before the law, yet it is equally the duty of the Government to punish crime.

Again, in its circular of March, 1887, to election officers, it said, after enumerating all the disqualifications of voters—

That no opinion which they (the Mormons) may entertain upon questions of religion or church polity should be the subject of inquiry or exclusion from the polls.

*Reynolds vs. U. S., 98 U. S., 162-3.

But this limitation, while shielding the elector, does not necessarily include the juror, the nature of whose functions imperatively requires of him judicial impartiality. Hence the law of 1882 wisely and conservatively provides that any one offered as a juror in a prosecution for bigamy, polygamy, or unlawful cohabitation under a statute of the United States, who believes the acts constituting these offenses right, shall, for such cause, upon challenge, be rejected.

With this record of historic names and wisdom and of the organic and municipal law of the land outstretched before us, what addition to it, if any, does experience now admonish?

Answering this question, I would respectfully recommend an amendment to the Federal Constitution perpetually prohibiting polygamy under whatsoever its guise, not only in the States, but also in the Territories and other places over which the United States have or may have exclusive jurisdiction.

The importance of such an amendment can not be overestimated. I would draw under a common and uniform civil cognizance the conditions of marriage and divorce, with the evidence and the authentication of the evidence of their verity, and thus subserve convenience and certainty in respect of the paramount feature of social life. Moreover, it would draw under the same cognizance the question of monogamy and polygamy, upon the dual terms of which in the one case turns the capacities of individual, social, and national development, and, in the other, turns the deadening and corrupting influence of the patriarchal principle and stationary despotism.

It would substitute a lasting organic law for a fugitive legislative enactment, which must cease to operate with the cessation of the anomalous Territorial condition.

It would raise an inferred and parasitic power, obscurely deduced from another power, administrative in its terms, and pointing directly to the disposal of property, to the dignity and distinctness of an expressed power.

It would inure as a solemn, deliberate, and final repudiation in this country of the Asiatic and African pestilence, polygamy.

It would be an authoritative and conclusive notification to immigrants from every land that the United States are dedicated to the virtues and blessings of monogamy, and, not least, the amendment, passing as a lesson into the common and higher schools of the land, would form and train the minds of generations in accord with its spirit and reason.

The material prosperity of a community generally depends upon the tillage of the soil. It was the commandment of the Creator to man that he should go forth and till the soil and live by the sweat of his face. Hence, whatever concerns the fulfillment and fruition of that commandment is of the first importance.

This premised, the question arises, what disposition of the public lands in Utah would best subserve the purposes and interests of that law?

To answer this question intelligently and usefully, it is requisite to advert to the extent of the Territory, to its natural features, to its climate and mineral resources.

Its length, north and south, is 325 miles. Its breadth, east and west, is 300 miles. It lies between the 37th and 42d parallels, north, and the 109th and 114th meridian west, Greenwich.

Total area	square miles..	87,750
Divisible—lands	do	84,970
Divisible—water	do	2,780
Divisible into acres—land		52,601,600
Divisible into acres—water		1,779,200
Total acres land and water		54,380,800
Proportion of mountains	per cent ..	88
Proportion of valley	do	12

The climate is rarely rigorous, and generally exhilarating and salubrious. This is witnessed by the noticeable physical development of the whites.

The out put of certain mines for the calendar year 1887 was :

Of gold	\$220, 000
Of silver	7, 000, 000
Total	7, 220, 000

Of the copper and coal products, I am only prepared to say generally that they were considerable and are increasing.

Commonly the presage of rain is delusive and the rain-fall deficient. On the whole, the region is naturally dry and arid. The snow-fall is the chief reliance for water, fertilization, and sustenance of vegetation. Artificial irrigation has been availed of, but, for lack of capital with the farmers, only in a desultory and imperfect manner. This fact, opening a field for speculation in lands and water rents, is engaging the attention of moneyed corporations and syndicates, but with a dubious prospect of ultimate advantage to settlers. The urgent need is a comprehensive and scientific plan of irrigation. There should be no waste of water.

As far as may be found advantageously practicable, waters of the rivers, lakes, cañons, and other mountain torrents should be made tributary to capacious and durable reservoirs for regulated distribution for all needful purposes.

Such a scheme appeals to the favor of Congress for economic and other reasons. As an efficient and suitable means of accomplishing it, I would respectfully suggest the cession of the unappropriated and unreserved lands of the United States in Utah for that purpose, under a compact concurrent with the eventual admission of the Territory as a State, and guarantying the application of the proceeds of the sales of the lands, or a reasonable annual tax thereon, to insure its faithful execution. I would further suggest the extension of such a scheme to the other arid Territories and the new States of the West, placing all the communities of the arid region upon the same level of advantage.

Under the operation of such a scheme the area of profitable production would be greatly increased. Comparably it would be greater than the arable area of the six New England States, and capable of sustaining a more numerous population. The effect in relation to the Mormon imbroglio would not be uncertain. Taking form in an influx of immigrants of predominating numbers and influence from the old States, the end of polygamy where it exists in the incipient States and the Territories would be irresistibly hastened and assured. In fact, the shortest way to the end of that evil lies in such a scheme.

The advantage of irrigation has been conclusively demonstrated. Rainless Egypt affords a striking and apposite example. With a narrow strip of land actually cultivated, containing less than 5,000,000 acres bisected by the Nile and irrigated by its annual overflow, she even now, in her decay and despair, finds a resource capable of sustaining its 4,000,000 occupants and of supplying an annual tribute in taxes

amounting to millions to her foreign creditors, showing that the proportion of land in acres to the population is as one acre and a fraction of an acre to each occupant. The fact seems incredible, yet it is well attested.

That resource affords the key to the conspicuous part played by Egypt in the ages of her power and prestige; to her armed conquests; to her lavish expenditures, evidenced by her colossal pyramids; to her convergence of the ancient lines of commerce upon Thebes and Cairo, upon Bagdad and Alexandria; to her antique yet mystic lore, which, borrowed and purged by the versatile Greeks of its sinister expression, became successively the beacon-light of the letters and literature of the pagan and Christian world.

The law creating the Commission, providing, as we have seen, for the representation of different political parties in its composition, plainly intended that it should be administered with judicial fairness and impartiality—in a non-partisan spirit. Dealing with the elective franchise and eligibility to office, elemental to republican government, it could hardly have been otherwise. Guided by the law and its intent, I have abstained from wresting either, while I have faithfully endeavored to give due effect to both.

I have already said that the existing laws are working well, and have cited accumulated proofs of the fact. To "let well enough alone" is a wise and safe rule. I would therefore recommend general adherence to it. Further aggressive legislation trenching further upon civil and political privileges would be injurious rather than beneficial. It would be regarded by the people affected as revolutionary and despotic. Savoring, under the circumstances, of persecution for religious opinion, it would provoke resentful feelings, an obstinate and reactionary mood. Such has been the effect of such legislation in all like cases. No religion was ever finally destroyed by either armed or unarmed proscription. "The blood of the martyr is the seed of the church."

The Mormon religion purged of its impurities will probably survive, how long no one can foresee. Its votaries, impelled by the zeal characteristic of a new sect, are active propagandists. Its vices, however, like those distorting any other system, must be amenable to the corrective laws of progress and intelligence. Civilization is a sublime revelation, modifying, improving, and elevating the yearnings of the human heart and mind. The ages of that fanaticism and fatuity which contrived the inquisition and the rack; which invented the medieval writ *de heretico comburendo*; which burned Latimer and Ridley at the stake; which inflicted the massacre of St. Bartholomew; which ruthlessly exterminated dissenters from orthodoxy in the Netherlands, and which drove the Puritans, the Huguenots, the Quakers, and their co-devotees to the cause of freedom in their native lands to find refuge in the New World, and to people it with teeming millions, and to bless it with republican principles and forms—those ages have passed away. To revive their dark and intolerant spirit now, in the nineteenth century, would add another proof and lament that the course of nations is not upon straight lines, but in wayward circles, ending where they began and rebeginning where they ended. The commentary of the philosophical historian would not be doubted. Passing the dismal panorama of reaction before him, he would not spare just censure upon whomsoever or whatsoever it should fall.

JOHN A. MCCLERNAND.

Hon. JOHN W. NOBLE,

Secretary of the Interior, Washington, D. C.

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APPENDIX.

NOTE A.

CLERK'S OFFICE, FIRST DISTRICT COURT, UTAH,
Provo City, August 15, 1889.

DEAR SIR: Herewith please find the information, as requested in the letter from the secretary of the Utah Commission.

Yours, etc.,

B. BACHMAN, JR.

Hon. J. W. JUDD.

For the period commencing September 1, 1888, ending June 1, 1889:

Convictions for bigamy and polygamy.....	2
Sentences suspended.....	
Convictions for adultery.....	42
Sentences for adultery suspended.....	10
Convictions for unlawful cohabitation.....	131
Sentences for unlawful cohabitation suspended.....	26
Convictions for fornication.....	10
Sentences for fornication suspended.....	9

NOTE A.

FIRST DISTRICT COURT,
Ogden, Utah, September 7, 1889.

DEAR SIR: Your letter to Judge Henderson has been handed to me to answer. I herewith make the following report, to wit: The number of convictions upon the charges of bigamy and polygamy since the 1st day of September, 1888, to the 1st of September, 1889, in this end of the district, has been 4, of which there were no suspensions of sentence.

The number of convictions for unlawful cohabitation, adultery, incest, and fornication was 102.

* * * * *

Your letter would have been answered before this, but I have been away ; out of the Territory.

Very respectfully,

H. H. HENDERSON.

ELIJAH SELLS, Esq.,
Salt Lake City, Utah.

NOTE A.

SECOND DISTRICT COURT,
Beaver, Utah, August 17, 1889.

SIR: In compliance with your request of the 13th inst. to the judge of the second district court, to cause to be transmitted to you a statement of the number of convictions had in said court for bigamy and polygamy since September 1, 1888, etc., I respectfully submit the following report:

- (1) Convictions had for bigamy and polygamy, none.
- (2) Sentences suspended for such convictions, none.
- (3) Number of convictions for unlawful cohabitation, adultery, incest, and fornication—that is, to particularize: 19 for unlawful cohabitation, 1 for adultery, and 1 for fornication.

Very respectfully,

Hon. ELIJAH SELLS,
Secretary Utah Commission.

J. R. WILKINS,
Clerk of Second District Court.

NOTE A.

THIRD DISTRICT COURT,
Salt Lake City, Utah, August 14, 1889.

GENTLEMEN: His honor Judge Zane requests me to reply to your request for information of the 13th instant, and submit the following:

Since September 1, 1888, in third district court, Utah:

Conviction for polygamy and bigamy	None.
Sentences suspended	None.
Conviction for unlawful cohabitation	42
Suspension of sentences	2
Conviction for adultery	3
Conviction for incest	None.
Conviction for fornication	None.

Respectfully,

HENRY G. McMILLAN,
Clerk District Court.

To the honorable the MEMBERS OF THE UTAH COMMISSION.

NOTE B.

FROM HON. CHARLES S. ZANE.

OFFICE OF THE UTAH COMMISSION,
Salt Lake City, August 10, 1887.

DEAR SIR: In view of your great experience and eminent service as a judge in this Territory, I beg leave to ask of you brief answers, as matter of useful information, to the following questions:

1. Whether, in your opinion, the existing laws, diligently enforced, may be reasonably relied on to work the cessation of polygamy as a practice?

2. Whether any case originating in the commission of the crime of polygamy since the date of the Edmunds-Tucker act has come under your judicial notice?

3. Whether, in your opinion, the alternative provisions of that act, extending the electoral franchise to those complying with their conditions and denying it to those not complying with them (or who are otherwise disqualified), have materially prompted the present movement for a constitutional inhibition of polygamy?

Your obedient servant,

JOHN A. McCLERNAND.

Hon. CHARLES S. ZANE,
United States Judge Third District, Utah Territory.

To the first question propounded within I answer yes.

To the second question I answer no.

To the third question I answer yes.

C. S. ZANE.

NOTE C.

FROM HON. WILLIAM G. BOWMAN.

OFFICE OF THE UTAH COMMISSION,
Salt Lake City, August 16, 1887.

DEAR SIR: Permit me to inquire whether, from personal and official observation, you are of opinion that the laws of the United States are working with increasing and encouraging effect a reformation of the practice of polygamy in this Territory?

Your obedient servant,

JOHN A. McCLERNAND.

SALT LAKE CITY, UTAH, *August 17, 1887.*

MY DEAR GENERAL: My answer to above interrogation is a decided yes. The change in Mormon sentiment in the last year has been marked and encouraging on the question of the suppression and abandonment of polygamy.

Truly, your friend,

WM. G. BOWMAN,
*U. S. Surveyor-General.*Hon. WILLIAM G. BOWMAN,
Surveyor-General United States, Utah Territory.

NOTE D.

"Marriage between ancestors and descendants of every degree, and between brothers and sisters of the half as well as of the whole blood, and between uncles and nieces or aunts and nephews, or between any persons related to each other within and not including the fourth degree of consanguinity, computed according to the rules of the civil law, are incestuous and void from the beginning, whether the relationship is legitimate or illegitimate."

"Marriage is prohibited and declared void: (1) With an idiot. (2) When there is a husband or wife living from whom the person marrying has not been divorced. (3) When not solemnized by an authorized person," as exclusively by probate judges, justices of the peace, judges of the district and supreme courts, or ministers of the Gospel or priests of any denomination, in regular communion with any religious society. (4) "When at the time of marriage the male is under fourteen or the female is under twelve years of age. (5) Between a negro and a white person. (6) Between a Mongolian and white man."

But "when the marriage is contracted in good faith and with the belief of the parties that a former husband or wife then living was dead or legally divorced, the issue of such marriage born or begotten before notice of the mistake shall be the legitimate issue of both parents."

Courts having general equity jurisdiction may declare void a marriage obtained by force or fraud, or at the instance of any next friend where the male was under sixteen or the female under fourteen years of age at the time of the marriage, and the marriage was without the consent of the father, mother, guardian, or other person having the proper charge of his or her person, and has not been consummated by cohabitation after that age. But "no marriage solemnized between any person professing to have authority therefor shall be invalid for want of such authority, if it was consummated with the belief of the parties, or either of them, that he had authority and that they were lawfully married."

"No marriage shall be solemnized without a license therefor, issued by the clerk of the probate court of the county in which the female resides at the time," "except when she is of full age or a widow, and it is issued on her application in person or by writing signed by her, it may be issued by the clerk of any probate court."

"If at the time of applying for the license the male shall be under twenty-one or the female under eighteen years of age, and not before married, no license shall issue without the consent of his or her father, mother, or guardian, personally given or certified in writing to the clerk, over his or her signature, attested by two or more subscribing witnesses, and proved by the oath of one of them, administered by the clerk. But when the parties are personally unknown to the clerk a license shall not issue until an affidavit is made before the clerk by the party applying for it, showing that there is no lawful reason in the way of the marriage, which affidavit shall be filed, recorded, and preserved by the clerk. And, if the party making the affidavit shall swear falsely therein, he shall be adjudged guilty of perjury."

"The person solemnizing the marriage shall within thirty days thereafter return the license to the clerk of the probate court of the county whence it issued, with a certificate of the marriage over his signature, giving the date and the place of the marriage and the names of two or more witnesses present thereat," and failing to make such return, he shall be adjudged guilty of a misdemeanor.

The license, together with the certificate of the person officiating at the marriage, shall be filed, recorded, indexed, and preserved by the clerk.

Various penal sanctions follow: "Any one solemnizing a marriage without license to the parties shall be fined not more than \$1,000, nor imprisoned not less than one nor more than three years, or both; or any one solemnizing a marriage without authority, under pretense of having such authority, or who falsely personates the father, mother, or guardian in obtaining a license, or forges the name of any father, mother, or guardian to any writing to give consent to the marriage, shall be imprisoned not exceeding three years; or if any authorized person shall knowingly, with or without a license, solemnize a marriage such as is prohibited by the act, shall be fined not exceeding \$1,000, or imprisoned not exceeding three years, or both; or any clerk or deputy clerk who shall issue a license for any prohibited marriage shall be imprisoned not exceeding two years, or fined not exceeding \$1,000, or both, and up on conviction shall be expelled from his office; or if he shall willfully issue a license contrary to his duty, as prescribed, he shall be fined not exceeding \$1,000." (Session Laws, 1888, pp. 88-89.)

NOTE E.

EXTRACTS.

[From the Salt Lake Herald, August 28, 1889.]

The Utah Commission should execute the law of Congress coming within the scope of its duties in letter and spirit. Congress has seen fit to prescribe a test oath as a condition precedent to vote and hold office in this Territory. Congress has not said * * * that no member of the Mormon church can vote or hold office; it confines its disqualification and disfranchisement to the express terms of the oath. It is a fair construction of the law, in fact it is the only reasonable construction, that it is the intention of Congress that all citizens who subscribe the oath shall have equal privileges in the conduct of civil affairs. * * * The law draws the distinctions; the Commission should draw none. The law says that all who can and do take the oath, whether Mormons or not, shall stand equal before the law; but the commission says, in effect, that no man shall be entitled to hold any office within its gift, except where such appointment is inevitable, who is a Mormon. It has been its uniform and invariable practice to appoint no member of the Mormon church or of the People's party to the office of registrar where a Gentile or Liberal could be found to receive the commission. * * * This is adding a new disqualification to those already imposed by other measures against the Mormon people. It is open to the serious objection of being supplementary legislation; it is precisely as though the statute said, which it by no means says, that no Mormon shall be appointed to any duty in connection with an election unless unavoidable. * * * It is not right.

R E P O R T

OF THE

GOVERNMENT DIRECTORS OF THE UNION PACIFIC RAILWAY COMPANY, 1889.

BOSTON, *December* 18, 1889.

SIR: The board of Government directors of the Union Pacific Railway Company respectfully submit the following:

The general condition of the Union Pacific Railway Company and the financial results of the year are very satisfactory. During the early months there was a considerable decrease in the net earnings, due to causes which to a greater or less extent affected the earnings of every railroad west of the Mississippi. The later months have shown an increase which will make the result for the whole year somewhat better than that of 1888. As the returns for the year will not be complete for several months, it is impossible at the date of this report to present any exact statements in regard to results, but these will be presented in the annual report of the directors in great detail.

This board believes that it would be entirely superfluous for it to enter upon any elaborate argument in favor of a definite settlement of the subsidy debt of this company to the Government. The absolute necessity for such action has been demonstrated so clearly by previous boards of Government directors, by United States Railroad Commissioners, by Congressional committees, by a special Commission appointed by the Government to investigate the subject, and by the late President of the United States, that further discussion on this point would be merely a waste of time and effort. It is, then, a well-established fact that the provision made by existing law for the extinguishment of the debt is entirely inadequate. It is also proven beyond question that on July 1, 1897, which is the average date of maturity of the subsidy bonds, the Government will hold a claim against this company utterly beyond the corporation's power to pay, and utterly beyond the Government's power to satisfy through a foreclosure of the statutory lien which it holds on a portion of the road. Such being the case, the only question for consideration is simply one as to the method of effecting a settlement.

This question, in the opinion of the directors, has been answered thoroughly and successfully in the bill (No. 8184) reported unanimously to the House of Representatives of the Fiftieth Congress by the Committee on Pacific Railroads, and also reported (Senate bill No. 3401) in like manner by a special committee of the Senate of the same Con-

gress. This measure, commonly known as the "Outhwaite bill," is based upon two general principles, that have been observed in all recommendations made on the subject by previous boards of Government directors. These principles are, first, that the settlement of the debt should be upon a basis of greater security to the Government, and which should be within the ability of the company to meet; and, second, that when the settlement should be made, the present relations of the Government to the current management of the road should cease; the United States assuming its true function, that of a creditor to the road, and the road continuing to act as a debtor, but without those hampering influences that are now involved by the Government's quasi partnership in its business management.

The Government directors do not hesitate to recommend specifically the passage of this bill. Representing as it does the result of the most careful investigation of the subject on the part of various bodies of able and distinguished public officials, we consider it the best expression of the general proposition for refunding the debt that has yet been given, and we believe that its practical workings will prove satisfactory to the Government and to the company. The various strong reasons urging its enactment are apparent to any one who makes even a casual examination of its provisions.

In the first place, it not only gives the United States a large amount of additional security for the debt, but in substituting a mortgage covering the entire property of the company for the purely statutory lien, with all its inseparable uncertainties and difficulties, held by the Government upon a fragmentary portion of the railroad, it furnishes a security far superior in character in every respect to that now held by the Government. What the precise value of this additional security is we do not feel called upon to decide. It is variously estimated at from \$35,000,000 to \$70,000,000. But, whatever it is, it represents the company's entire property, and this is all the road has to offer. It is the belief of this board that, in view of the present condition of the company and its excellent prospects, the proposed security is entirely adequate, and will insure the payment of every dollar due the Government before the time (fifty years) for which the mortgage is given shall have expired.

Under the proposed law all the vexatious controversies between the United States and the company, such as have occurred under existing laws, will cease; all questions as to the investment of the sinking fund are ended, the Government being relieved from all trust obligations to the company. In making the Government an ordinary creditor, the company is left free to attend to its own business and to develop its system and territory untrammelled in its efforts so long as the provisions of the act are carried out. With its increased and improved security, with the gradual reduction of the debt, with the provision for foreclosure constantly ready to act, the Government can well afford to let the company conduct its own affairs.

The road's physical condition, which has been the subject of a careful personal investigation by members of this board within the past few weeks, is very satisfactory. The system of constant betterment, that is, improvement in excess of ordinary maintenance, which was begun by the present management at the inception of its work, has been continued with vigor and energy during the year. All portions of the property—tracks, road-beds, bridges, stations, rolling stock, and motive-power—afford conspicuous evidence of the thorough manner in which this sound and far-sighted policy has been carried out.

In conclusion, we consider it entirely fitting, and part of our duty as Government representatives, to express our confidence in the ability, honesty, and purposes of the road's present managers. During the five years that they have administered the affairs of the company there has been displayed by them constantly such a wisely-directed energy, such a faithful persistency in the face of the most discouraging obstacles, such an honorable determination to place the road in its right relation with the public and the Government, as to call forth the warmest praise and commendation. In rescuing the Union Pacific system from the insolvency that threatened it in 1884, and placing it upon a sound financial basis in the face of opposition such as few railroads ever had to struggle against, the managers have accomplished a truly Titanic task. It is earnestly hoped that Congress will supplement their work with the legislation we have heartily recommended, and thus put this great railway system in a position which it is entitled, under every consideration of justice and sound public policy, to occupy.

Respectfully submitted.

JNO. F. PLUMMER.
JESSE SPALDING.
GEO. E. LEIGHTON.
RUFUS B. BULLOCK.
JAS. W. SAVAGE.

Hon. JOHN W. NOBLE,
Secretary of the Interior.

REPORT

OF

THE GOVERNOR OF ALASKA.

DISTRICT OF ALASKA, EXECUTIVE OFFICE,
Sitka, October 1, 1889.

SIR: In compliance with the requirements of section 2 of the act of Congress entitled "An act providing a civil government for Alaska," approved May 17, 1884, I have the honor to submit the "annual report of my official acts and doings, and of the condition of the District of Alaska, with reference to its resources, industries, population, and the administration of the civil government thereof," for the year ending June 30, 1889.

Acting under the commission of the President, dated the 13th day of April, 1889, I took the oath of office as governor of the District of Alaska on the 25th day of the same month. On the expiration of a short leave of absence, granted by the Secretary of the Interior, I proceeded with all possible dispatch to the post of my duty, arriving within the Territory on the 1st day of June, 1889, and have here remained since that time.

Immediately upon my arrival I proceeded to make such investigations into the condition of things within the Territory as was possible with the limited means of communication afforded.

I inspected such towns, villages, and business enterprises, including manufactories, mills, mines, canneries, and fisheries as were within my reach, all in that part of the Territory known as southeastern Alaska, and inquired into the working of the governmental machinery and the efficiency of the officers and employes, investigated the work of the courts of justice and the enforcement of the laws, and took such measures as were found practicable to pursue my inquiries into the climatic and agricultural conditions, the mineral resources, and the most pressing needs of the Territory for the protection of its people in the pursuit of their various industries and occupations, for the elevation and civilization of the natives, for the promotion of efficiency in the conduct of its affairs, and for the highest development of its immense and varied resources.

One of the first of the many perplexing problems presented to me in the discharge of my official duties here was the question of how to meet the rapidly increasing demand for more convenient facilities for taking oaths required by law, in the transaction of business, and in the discharge of official duties, and especially for facilitating the adminis.

tration of justice, preserving the public peace, and holding criminals for trial in out-of-the-way places. The law seems to make provision only for the administering of oaths, taking testimony, punishing breaches of the peace, and holding criminals for trial, by four commissioners, residing respectively at Sitka, Juneau, Fort Wrangel, and Ounalaska. These commissioners, when on duty and accessible, as they are not always, are scarcely sufficient for the accommodation of forty thousand people scattered over a Territory of 600,000 square miles, especially with opportunities of communication and transportation limited as they are within this District.

To remedy this evil, which is constantly increasing by reason of the extension of business enterprises in remote places, my predecessor, assuming that the general law in relation to Territories, authorizing governors to appoint justices of the peace, constables, and notaries public, prior to the assembling of the first Territorial legislatures, to be applicable within this district, proceeded to commission certain persons to these offices. Thus far the validity of these appointments has not been tested in the courts. But so doubtful did the question seem, as to whether these appointments would stand the test of legal investigation, that it was only after a long hesitation, and a painful consideration of their absolute necessity, that I concluded to follow the precedent established. Would it not be well to have this doubt removed and the danger of unfortunate results taken away by appropriate legislation.

After my arrival in the Territory, two applications for executive clemency were made by prisoners serving terms in the penitentiary, one for selling intoxicating liquor to the Indians, and the other for burglary. In the former case the petition was denied. In the case of Bernard Donnelly, serving a sentence for burglary, after careful consideration, a reprieve was granted awaiting the action of the President upon a petition previously forwarded praying for pardon.

POPULATION.

No enumeration having been made, an attempt to give accurate statistical information as to the population of Alaska would result in the repetition of the farce so many times repeated since the American occupation in 1867. The census of 1880, which is itself so largely made up from estimates that it is far from satisfactory, gave the whole population as 33,426, of whom only 430 were whites. The several estimates of my predecessor, while varying somewhat from each other, largely increase the number, giving in 1888 a total of 49,850, consisting of 6,500 whites, 1,900 creoles, 2,900 Aleuts, 3,500 civilized and 35,000 uncivilized natives.

I am unable to say to what extent these estimates are erroneous. Careful inquiry of those best informed leads to the belief that the number of the native population within the Territory of Alaska has not been materially changed since the enumeration of 1880. The number of births has probably fully kept pace with the number of deaths. The reports in circulation of rapidly approaching annihilation of the native tribes by reason of wasting disease are either gross exaggerations or, more likely, the perpetuation of stories, true, perhaps, at the time they originated, *i. e.*, soon after the transfer of the Territory to the United States, but not applicable now. It is more than probable that the next official enumeration will disclose a larger native population than the last.

The white population has, undoubtedly, increased considerably during the last few years, though with all the increments incident to the estab-

lishment of a large number of mills, canneries, manufacturing and mining enterprises during the last year, I am unable to estimate the white population, other than creoles, at a higher figure than 3,500. These people, who are mostly engaged in trading, fishing, and mining operations, are not generally permanently located, and never will be while, by operation of law, they can not acquire titles to the land they occupy and improve. And while, in the nature of things and by the compulsion of their legal status, they are almost transients, they do not compare unfavorably with the residents of the States and older Territories as peaceable, law-abiding citizens. Chinese laborers, to the number of five hundred or more, are employed at the canneries and elsewhere, during the summer season, returning, for the most part, to the States for the winter.

The Hydahs and Thlinkets of southeastern Alaska, the Eskimos residing along the coast from Cook's Inlet to Copper River, and the Aleuts live in comfortable frame or log houses, introducing year by year more and more of the comforts of civilized life into their habitations, and they may be considered as on the road to civilization; and in the vicinity of the schools and missions many of the younger people can talk English and are learning to read and write. The great body of the Eskimos of the Arctic region, the Tinnehs of the Upper Yukon, and the Eskimos of the coast of Behring Sea live in log huts partially underground. They have made less advancement in civilization than the lower coast tribes. On the whole, my observations and information from reliable sources lead me to these conclusions, viz: That previous to 1879, with one or two limited exceptions, the efforts to educate, civilize, and elevate the natives of this Territory were fitful, unsystematic, and unfruitful; that from small beginnings the work has increased and improved in methods and efficiency until, with our Government schools, mission work of the various religious denominations, and contact with the better classes of white people, the influences for good are becoming more effective; that when we consider the degradation into which these people had fallen, and the influences of a degrading character to which they were subjected during the early years of their contact with white people, and the lack of systematic efforts to ameliorate their condition, until so recent a date, their progress upward must be considered quite as great as could be expected.

TAXABLE PROPERTY.

When it is considered that the income derived by the General Government from the territory of Alaska is obtained wholly by special taxation, rentals, royalties, sales, etc., and that we have no complete local or civil government, and consequently no enrollment or assessment laws, a statement that there is no means of determining the actual amount of taxable property within the Territory is scarcely necessary, and I shall consider the few suggestions I am able to make upon the subject a sufficient compliance with the request of the Secretary of the Interior for a report upon this topic.

The value of all the real estate, except mines and mills, of which individuals or corporations have titles, within the Territory, does not, probably, exceed \$15,000, there being only twenty-one fee-simple titles originally given to its employes by the Russian-American Company, and afterwards confirmed by the protocol executed by the commissioners of Russia and the United States at the time of the transfer in 1867.

On the 30th day of June, 1889, only eight patents for mining claims and one for mill-site had been filed in the office of the recorder; and the value of these properties, most of which are, as yet, undeveloped, is too uncertain to make them the basis of a very high estimate of taxable values. Hence, we may safely assert that the taxable property of Alaska, whatever else is true of it, is essentially of a personal nature.

The aggregate of expenditures in the establishment and development of the various industries of Alaska has, undoubtedly, been very great, but the results, in the form of an accumulation of property in sight and taxable, are small indeed. A large proportion of the business enterprises are carried on by foreign corporations, and the products of their business are shipped immediately to market or stored in the States. Hence, the amount of taxable property in connection with these establishments is very small. For similar reasons, there is very little money or choses in action in connection with these business enterprises which can be claimed to be assessable as taxable property within the Territory. These corporations are represented here only by agents who have little or no interest in the business they represent, except that of their agency, and who, presumably, are not possessed of a superabundance of this world's goods, while the men who receive the income as owners or stockholders are non-resident. We must therefore look elsewhere than here for most of the taxable property of the Territory.

It will scarcely be claimed that any considerable amount of taxable estate can be found among the natives. Their houses, though comfortably warm, and perhaps sufficient for their simple requirements, have no very great commercial or taxable value, and their other property in sight consists mainly in their canoes, blankets, dogs, furniture, and tools.

The white population of the towns consists, for the most part, of traders, miners, artisans, and laborers, comparatively few of whom have accumulated any considerable amount of wealth. Besides, these accumulations, in cases where there are such, are largely invested in doubtful mining claims, improvements upon land to which they have no title and can have none, and Indian curios, whose value is too fictitious and uncertain for estimate under this head. Some, undoubtedly, very wisely transfer their surplus funds to some other jurisdiction, where the laws do not so crushingly discriminate against thrift and economy.

Taking all these matters into consideration, it would seem that an estimate of \$5,000,000, as the value of the taxable property in the Territory, would be too high rather than too low.

But these notorious facts, and the inevitable conclusions as to the smallness of the value of the taxable property in the Territory, should not lead to unwarranted conclusions as to the resources and value of the country, nor in regard to its capability of affording an income sufficient for governmental purposes.

The natives of Alaska, unlike the Indians of the plains, are self-supporting. The United States realizes an annual income of \$317,500 from its contract with the Alaska Commercial Company alone, besides something from other sources. The annual appropriations for the support of the civil government amount to \$37,350, and the schools are allowed to use from \$25,000 to \$50,000 more, according to the economical ideas of each particular Congress. And whether the other departments do or do not quite pay their way, there is a handsome net profit to the credit of the Territory.

SETTLEMENT OF THE PUBLIC LANDS.

Every mail brings to the officers of the civil government letters of inquiry from residents of the States and older Territories, asking about the public lands and by what method of procedure bona-fide settlers can obtain titles from the United States to lands in the district. Other indications are not wanting to prove that the attention of a great many people has been attracted toward Alaska as a place of permanent residence, and one of the duties of the executive, during the last year, has been to correct false impressions as to existing conditions, which might have led to disappointment and serious loss if those desirous of coming here with stock and agricultural implements, prepared for extensive operations in cultivating the soil, had not received timely warning as to the true situation of affairs.

As a matter of course, these inquirers were informed that, under existing laws, no legal titles to land, except mineral lands for mining purposes, can be secured by any process whatever; that every resident who erects a shanty to protect himself and his family from the storms of winter in this northern latitude is a trespasser and liable to be ejected by legal process; that the cutting of a walking stick, or the gathering of wood sufficient to boil his coffee, is a breach of the law which must be ignored by officers sworn to faithfully execute it; that one who comes into the Territory to live must take his chances with every other resident, recognizing the fact that in places remote from the centers, though in the midst of savage tribes, communication with the authorities is impossible, except at rare intervals; and when informed of trouble needing immediate attention, the civil government lacks facilities for serving processes or affording protection, so that long delays in execution constitute the rule rather than the exception.

If these conditions were unavoidable, it would be out of place and untimely to speak of them here. But they do not have their origin nor do they in any way depend upon the local situation. I do not for a moment suppose there is any lack of intelligent interest in this outlying province on the part of Congress. I know the learned gentlemen composing that body desire to promote its interests, protect its people, and in every way faithfully discharge the trusts devolving upon them by the treaty of cession to the United States in 1867.

And yet the fact remains that after twenty-two years of our occupation, though there has come to be within the Territory a large population, natives as well as whites, who desire to reside in permanent homes, there is, with the exception of twenty-one Russian titles acquired before the treaty, absolutely no home within the Territory, except the precarious one of the squatter, who is liable to lose the fruits of all his labor in establishing it, by a brief absence, if indeed the General Government itself does not some time hereafter conclude that this particular selection is needed for a reservation. The situation, certainly, is not encouraging for the erection of first-class houses, nor for the expensive processes of preparing land for cultivation, nor for the development of the resources of the country generally. The policy of neglect heretofore prevailing, however unintentional, has been entirely effectual for the prevention of progress and development in the past, and, if persisted in, must be equally potent to bar future progress in the direction of permanent improvements.

It is not claimed that there should be a general extension of the land laws as they are in force elsewhere to the Territory of Alaska. Its impossible conditions forbid that. In fact only a small proportion of the

Territory can be profitably used for settlement and cultivation. In southeastern Alaska there are numerous comparatively level areas of land at the mouths of the short, swift streams coming down from the mountains, and larger tracts of arable land upon the islands to the westward and in the valleys of the Yukon and its branches which might be profitably cultivated or used for meadows, while many of the hill-sides could be utilized for pasturage. And while the chief industries of the Territory would still remain as now, perhaps—fishing mining, lumbering, etc.—if these arable areas were utilized to supply much needed agricultural and dairy products for the local markets, and attractive homes, with the luxuries of vegetable gardens attached, could be built and enjoyed without the menace of possible loss by the accident of temporary absence or otherwise, an impetus would be given to every industry of the Territory, and the shanty and fast-decaying log house would speedily disappear and be replaced by thrifty-looking, comfortable houses, occupied by natives as well as whites.

It is true the habits and education of the natives have never led them in the direction of cultivation of the soil. But they have strong attachments to localities. They are quite industrious. They have even stronger desires than the whites to acquire property. With all the unfavorable conditions of the present, they have permanent habitations to which they return in winter, after their summer work is done. And we may reasonably believe that, with proper inducements of protection, encouragement and education, and especially with the stimulus of example from the whites, for they are good imitators, they would soon learn to extend their spaces and build better houses and have cultivated fields attached.

It will be readily seen that I am strongly of the opinion that Congress ought to afford relief from these difficulties by legislation. The town-site law, as now in force elsewhere, with certain modifications adapting it to the peculiar conditions of this Territory, would reach and remedy a large number of cases of real hardship. The details of what ought to be included in an act extending it to Alaska will readily suggest themselves to any person taking the trouble to study the subject. A law giving some method of acquiring homesteads and fields for cultivation, outside of towns, where the land is suitable, either by pre-emption or otherwise, and especially giving them to the natives without purchase, upon certain conditions of cultivation, would seem only just, and it would do much toward placing this territory in a condition of substantial progress and permanency of improvement. For these farms it seems to me that Judge Keatley's idea of limiting the amount for each individual to 20 acres is wise and reasonable.

FORESTS AND THE PRODUCTION OF LUMBER.

There are immense forests of timber and wood in Alaska, consisting mainly of spruce, hemlock, and red cedar, with occasional patches of yellow cedar, alder, and other woods, much of which is of excellent quality for economic purposes, and considerable of it readily accessible and easily transported to mill and market. There are also ample mill facilities for its manufacture into lumber, at least for the present demand, though that demand has very much increased within the last few years by reason of the multiplication of business enterprises in the Territory, and the necessity for places of residence for those doing business here, and their laborers, however temporary their sojourn.

From the best information I can obtain at this writing, I believe there are now eleven mills, a list of which I append hereto, in condition for operation, or only temporarily disabled, all but one of which are in southeastern Alaska. Some of these mills have the capacity for manufacturing a large amount of lumber. There are also other mills in contemplation, several of which, to my personal knowledge, are fully determined upon. None of these mills are doing full work, and I believe all shut down entirely during the larger portion of the year, while a few have not been in operation at all for some time past. The lumber produced, it is believed, has all been used for local purposes, none being carried out of the Territory.

A little of it has been manufactured into boxes and cases for the products of the other business enterprises, and in this modified form, perhaps, carried beyond the limits of the district.

But while the forests, next to the water, constitute the most prominent feature of the country, and while they are filled with timber of the finest quality, and furnish lumber equal, if not superior, to anything imported into the district, it is a noteworthy fact that a considerable portion, perhaps the larger portion, of the lumber used here, especially for building purposes, is brought in from other jurisdictions, and prices are regulated by the market prices in Oregon and Washington Territory, adding thereto the tremendous freight bills of a transportation company which has no competition.

I have already barely alluded to the embarrassment caused by the timber law which allows no white person to lawfully use wood and timber from the public lands, even for domestic or other local purposes. If there were any provision for acquiring titles to land by purchase the situation would not be quite so serious; because then the lumber manufacturer might purchase timber lands and carry on his business within the pale of law, and at least have a feeling of self-respect and a sense of safety which he can not have when he knows he is subject to penalties of a broken law and is dependent upon the possible caprices of official favor. As the matter now stands all the land belongs to the Government, and it is inalienable under existing laws. Then penalties are prescribed for using the wood and timber. It is true the Land Office seeks by official interpretation to avoid the unreasonable and severe consequences of strict compliance with the law, and, in fact, no prosecution has been brought against parties using timber and wood for local purposes.

But this judicious and wise action of the Commissioner does not remedy all the unfortunate effects of the legal status. There is an uncertainty as to what may happen hereafter, especially if personal hostilities or jealousies should be aroused, which rests like an incubus upon all enterprises for the production of lumber, and which far more than counterbalances any restraining effect which would result from a reasonable stumpage price for the timber, by which a large income might accrue to the Government.

These facts seem to warrant the following conclusions, to wit:

First, the lumber interests of the Territory, in the present condition of affairs, are far from satisfactory to any one concerned. The Government can scarcely be content to have its forests denuded of their valuable timber without compensation or profit. The manufacturer can not be satisfied to have his investment prove profitless through the uncertainties as to prosecution for violations of the law and limitations of his market on account of the want of titles to the land upon which improvements would be made. Those using the lumber naturally complain because

of the unreasonable prices and the embarrassments arising from interruptions of the supply, which result as a matter of course from the unfortunate complication of affairs.

Secondly, two very simple modifications of the laws, suggested in the foregoing remarks, would result in giving to the Government its rightful compensation and income, make these manufacturing enterprises, and many more like them, first-class, paying business enterprises, bring into the Territory a desirable class of busy, thrifty settlers, who would come to make permanent homes, translate our now dilapidated villages into beautiful towns, full of neat, attractive, comfortable houses, fill the country with stock, and afford ample supplies of dairy products, build wagon-roads along our water-courses and through the mountains, take the water for domestic use to the consumer by means of water pipes, instead of having it brought in demijohns and in hand-carts, and infuse new life and thrift into all our industries, and have a tendency to make this land the paradise it is sometimes thought to be, but is not, as a place of residence.

The saw-mills in Alaska are as follows, viz :

- (1) At Metlahkahtla, or Port Chester, steam mill, Mr. William Duncan's.
- (2) At or near Howkan, steam mill, Presbyterian Mission.
- (3) At Klawak, steam mill, Mr. Wadleigh, superintendent.
- (4) At Klawak, water-power, Salmon Packing Company.
- (5) At Chican, water-power, Mr. Sprague.
- (6) At Fort Wrangel, steam mill, Wilson & Sylvester.
- (7) At Juneau, or Sheep Creek, water-power, Mr. Depue.
- (8) At Douglas Island, steam mill, Alaska Mill and Mining Company.
- (9) At Sitka, steam mill, Brady & Doran.
- (10) At Sitka, water power, Mr. Haltern.
- (11) At about 5 miles from Silver Bay, water-power, Little Mountain Mining Company.

COMMERCE.

The exports of Alaska consist, for the most part, of furs, ivory, berries, Indian curiosities, and the products of her fisheries and mines. The imports are goods of all kinds for trade with the natives, coal, lumber, machinery, and other articles required in the mining and other industrial enterprises of the Territory, and supplies for the people generally. The fur trade is a very important one, and the seal fur being the most extensive, comes first in the enumeration. Then the sea-otter, on account of its great value. The other fur-bearing animals found in Alaska in sufficient numbers to have their furs take position among the articles of export, are several grades of wolf, white, blue, and silver-gray foxes, black, brown, and cinnamon bears, mink, marten, wolverine, lynx, hair seals, and deer. Cranberries of superior flavor grow abundantly without cultivation or care, and they have come to be an article of export, to a limited extent. The demand for them in market justifies the conclusion that their cultivation would become a profitable industry. One firm in Sitka, the present season, shipped some 2,000 gallons to San Francisco. Indian curiosities and bric-a-brac, called in common parlance curios, are sold in great numbers to tourists and others, and their manufacture affords a profitable employment for the natives during the dull season of the year. The amount of canned salmon shipped from the Territory is enormous, and the shipment during the year ending June 30 last was much greater than ever before.

The other shipments of fishery products included considerable quantities of smoked, salted, and fresh halibut, dried and pickled cod, and fish-oil. There was, undoubtedly, a considerable increase last year in the production of gold, silver, and lead, the exact amount of which I am unable to give.

The following estimates of the value of exports during the year which this report is designed to cover were made by Collector Pracht, who has had exceptionally good opportunities for arriving at correct conclusions in regard to them:

Fish, oil, bone, and ivory	\$3, 225, 000
Furs	1, 750, 000
Gold (bullion, ore, and dust)	2, 000, 000
Silver	50, 000
Total	7, 025, 000

The amount of exports not included in the above is not large, and there is very little data upon which to base an estimate of it.

AGRICULTURE AND STOCK RAISING.

Scarcely any progress was made during the last year in the development of the agricultural resources of this Territory, which is not a matter of surprise, considering the impossible conditions of which I shall hereafter speak. In fact, very little has been done in that direction, even in the way of systematic experiment, since the discovery of Alaska, more than a century and a half ago. The native people had never, in any sense, been an agricultural or pastoral people. During the whole of the Russian occupation the possibility of agricultural pursuits within the Territory was, apparently, never contemplated, and the Russian idea that it was worthless for the purposes of the cultivation of the soil seems to have been transferred to the American purchasers with the transfer of the possession. Since that time, all, or nearly all, of the persons coming here, for residence or business, have evidently come for other purposes, and have had neither time nor inclination to expend the energy or the money necessary to clear the land of the heavy timber growths and remove the accumulations of the débris which, by reason of its slow decay and its intermixture with the gnarled roots of living trees, has become a formidable barrier to progress in the preparation of the soil for the reception of seed or the growth of grasses. Hence there are no broad acres of meadow, no fields of waving grain, no barns, granaries, or sheep-sheds, no agricultural implements or machinery, no practical farmers or dairymen. The few natural meadows and grass plats are innocent of the plow and mowing machine. Only a few horses, mules, hogs, hens, and cattle are seen feeding and fattening about the little villages and roaming at will upon the public lands, though pasturage costs nothing and the winter feeding only lasts for two or three months.

This may be said to be a brief summary of the present situation. Now, the question arises, Is this condition of things a necessary one? Is there nothing better to which we may hope to attain at an early day? Ought we to rest contented with it? Should the National Government take steps to foster these industries, or is there too little encouragement of success?

It must be conceded that the larger part of the Territory is unsuitable for farms. It must be admitted that rules applicable to other portions of the public domain are inapplicable here, even to those portions susceptible to cultivation.

In this consideration, we may as well, perhaps, lay out of the account all that part of the Territory lying north of the Arctic Circle, as too cold for successful agricultural pursuits, though I assert nothing in regard to its possibilities for cattle raising. So, also, the value of the Upper Yukon, which belongs mostly to a foreign jurisdiction, can find no proper place in this report. My information in regard to the mainland north of the Alaskan Range of mountains, including the alleged broad and fertile valleys of the Yukon, Kuskokwim, and Nushagak Rivers, is incomplete and somewhat uncertain; but such as it is, it tends to show that there are large sections of comparatively level land, especially the bottom lands, which might be utilized for farming operations, and especially for raising stock. This matter is, however, a subject for investigation rather than report, and my facilities for such investigation forbid it, for the present, at least.

Southeastern Alaska, the Aleutian, Shumagin, and Kodiak Islands, the peninsulas of Aliaska and Kenai, and the coast section between Cook's Inlet and Yakutat Bay, are much broken and mountainous, with only comparatively small sections of arable land. It may be that one-tenth part of the surface is a sufficiently large estimate for the land that can be profitably cultivated. The island area of this Territory is about 31,000 square miles, and the coast section of the mainland, having similar conditions, contains not less than 19,000 square miles. Taking an estimate of one-tenth as the amount of arable land, we have an aggregate of land suitable for cultivation as large as the State of Connecticut, and twice the size of Delaware, and it can not be considered as entirely insignificant.

The climatic conditions through these several sections of country, while they vary to some extent, are sufficiently alike to be discussed together. A warm ocean current from the southwest strikes the coast and flows along the whole extent, modifying the heat and cold so that the summers are uniformly cool and wet, and the winters uniformly mild. In summer the thermometer seldom indicates higher than 70°, and in winter the mercury scarcely ever falls to zero. Theory suggests, and actual experiment and observation through a great number of years proves conclusively, that the portion of the land which may be cultivated has a rich, fertile soil, covered with a deep vegetable mold, and that vegetables, like cauliflower, lettuce, cabbage, celery, pease, and root crops, including potatoes, beets, carrots, turnips, and radishes, etc., and all the small fruits, like currants and berries, will grow luxuriantly, mature with certainty, and produce abundant crops for the harvest.

I have already referred to the native cranberry, which is so abundant without cultivation as to be an article of export, and which, with proper culture, might become an important product for the markets of the world. I have no doubt but that apples of hardy varieties, and plums, might be raised without difficulty.

No sufficient experiments have been tried with grains; but the inference is that there is too much wet weather for wheat, and too little warm weather for corn. Oats have been grown to maturity with satisfactory results, but their culture has only reached the stage of initial experiment.

Grasses of all kinds grow luxuriantly, wherever the sun can penetrate through the thick timber and brush to the ground.

Wild grasses fringe every shore and develop in tangled masses upon every open plat of ground in the forest. Here and there, all about the settlements, may be seen patches of timothy, red top, Kentucky blue-joint, and other grasses recognized as desirable for cultivation, and

these grasses mature and seed as perfectly as in lower latitudes. One difficulty has been suggested, and I recognize it as real, but not insuperable, that is, during many seasons it is impossible to cure hay by the drying process usually resorted to in preparing fodder for winter use. It is said that the expense of importing hay from the States to feed cows during the two or three months in which they need to be fed will reduce the profits of a dairy during the rest of the year to a nullity. But I believe the preparation of fodder in the form of ensilage, which does not require the aid of sunshine, will do away with that difficulty. With the limitations to success which must exist in a country like this, where only a small portion of it is suitable for cultivation, and where the climatic conditions prevent general farming, and where the expense of preparing the land is so great, we can not expect rapid development, nor that it will ever attain the highest rank as an agricultural country.

And yet we should not make the mistake of supposing that agricultural pursuits are impossible, or that wool-growing, cattle-raising, and the keeping of dairies must necessarily be unprofitable. I believe I am justified in the conclusion that special farming and the manufacture of dairy products, at least for the local demand, will eventually become important business enterprises in Alaska. With the development of her mining and manufacturing interests, which are already recognized as important, and giving even greater promise for the future; with her fisheries, the products of which, when developed, will undoubtedly prove more valuable than those of all the rest of the United States, and her fur trade, which yields a greater revenue than that of any other country of its size in the world, there must of necessity grow up towns and villages, all along up and down our extended coast line, greater and more numerous than we now have, which must be supplied with just such commodities as we have seen can be readily produced.

If, then, our observations have been carefully made, and our conclusions are warranted by the premises, why is it that the land suitable for agriculture and stock-raising still remains covered with the primitive forest, and that there is no perceptible progress in agricultural pursuits from year to year? For those who are aware of the fact that it is utterly impossible under existing laws to acquire titles to lands, other than mineral lands, within the Territory, there is no need of further answer. There are, undoubtedly, other causes, some of which have been alluded to, helping to influence and bring about the results we have been compelled to report. But alone they would be as a feather's weight. There are plenty of men who have the courage and the faith to battle with the elements of uncertainty as to production and markets, and who would be willing to make the experiments necessary to test the kind of crops desirable to raise and the methods of cultivation suitable to our peculiar climate and soil, and would grapple with the knotty problems of reduction, if these difficulties stood alone, and their pluck and energy would challenge our admiration. But if any man were found willing to undertake these difficulties, and submit to the hardships inevitable, with the additional discouragements and dangers incident to the legal impossibility of securing a title to the land upon which his improvements are made, we should rightly conclude that there was some defect in his judgment, if we did not bluntly call him a fool.

Whatever reasons may have previously existed for delay in applying the remedies of legislation to these unfortunate conditions, I am sure there can be no good reason why Congress should not now afford the relief which that body alone can give; and the people of Alaska are

united in praying that the matter may be laid before them with executive recommendation to early action.

LABOR SUPPLY.

The conditions of the demand and supply of labor in Alaska are, perhaps, somewhat different from those of any other State or Territory, owing to the large number of natives who, while they belong to the laboring class, are still quite independent of capital and employers. Here, as elsewhere, and, perhaps, more than elsewhere, this puzzling economic question is far from being solved; and yet it does not appear that any very serious difficulty has been experienced during the past year, either by employer or employé.

The natives, as a rule, are open to engagement for employment during the summer, and, to some extent, during the winter. Under favorable conditions it is conceded that they are excellent help, industrious and quick to learn. Some of the mining and manufacturing companies employ them in preference to any others; others complain of their utter unreliability; so that we are compelled to believe that a middle theory is the correct one, to wit, that while they are generally good workmen and reliable, their native instincts and the habits of generations calling them to the water and the woods, for fishing and hunting, often prove too strong for their sense of the obligation of a contract, and they are liable to leave work just when they are most needed. To guard against this tendency the fishery companies, especially those engaged in salmon canning, whose work must be done promptly and within a given time, import a considerable part of their laborers, mostly Chinese, from San Francisco and other points along the Pacific coast, who come in the spring and return home in the fall. These employers complete their supply of laborers with natives.

At the mines and mills the urgency for the labor at a particular time is not so great, and the place of one who leaves can be soon supplied by another. Knowing this fact the native workman is held to his work by fear of consequences to himself. There is satisfaction in the consideration that these native laborers are improving in skill and reliability as they learn American ways and acquire the English language.

White men usually pose as skilled laborers, or at least assume to have superior intelligence, and demand higher prices; and still very few of them are idle, except those who are shiftless and will not work. The demand for labor, however, does not justify wholesale immigration of laborers. If one has a place in readiness for him by previous contract, it is safe to come here without capital; otherwise not. Probably any considerable addition to the number of those seeking employment here, in the present condition of things, would compel a reduction of wages by the competition.

Wages may be rated as follows: For the natives \$1.25 to \$1.50 on contracts for continuous labor, with an extra price for single days. White laborers usually command from \$2 to \$2.50 per day.

EDUCATION.

While it is impossible to report that measure of progress and success in educational matters within the Territory which is desired, the responsibility for the lack of success does not rest with the general agent of education, or the Territorial board, who spared no effort to make the schools efficient and useful to the utmost of their capabilities. Thirteen

day schools, wholly supported by the Government, were in session through the school year, and one, which it was thought was provided for, failed to materialize on account of the distance and our want of means of communication. Those in actual session were, one each at Howkan, Metlahkahtla, Klawak, Wrangell, Killisnoo, Douglas Island, Haines, Kodiak, and Afognak, and two each at Sitka and Juneau. The total enrollment reported in these schools was 1,040 pupils. The school provided for at Unga failed by reason of the inability of the teacher who had been engaged to reach the place. At all the schools, except one of the Sitka and one of the Juneau schools, the attendance was almost wholly native. The aggregate of the salaries paid for the thirteen schools was about \$11,000.

In addition to these public day schools there were four boarding schools aided by the Government, as follows, viz, at Anvik, Bethel, Carmel, and Sitka. The school at Anvik, on the Yukon, in connection with the Episcopal mission at that place, though it has not attained to large size, is apparently doing excellent work. On account of its great distance away (3,844 miles) from San Francisco, its post-office, and receiving but one mail a year, its report of attendance during the last year has not been received. The statement as to Anvik is substantially true as to the school at Bethel, on the Kuskokwim River, in connection with the Moravian mission at that place.

The school at Carmel, on the Nushegak River, in connection with the Moravian mission at that place, reports 25 pupils, and gives promise of greater usefulness. The industrial boarding school at Sitka, under the management of the Presbyterian Board of Missions, had 20 teachers and employes and 170 pupils during the last year. The pupils consisted of 106 boys and 24 girls. They were instructed in elementary English studies and the various industries suitable to their condition in life. For details see Appendix.

The Alaska Commercial Company maintained schools, one each upon the islands of St. Paul and St. George, from which come good unofficial reports, both as to the attendance and their efficiency, but no report has been made by the teacher, or the company, at least, to the Territorial board. These schools are Government schools only as being included in the general contract between the Government and the company.

Other mission schools have been maintained in different parts of the Territory, of which my information is quite limited, and yet enough is known to render it certain that much is being accomplished outside of the schools receiving support from the Government. The Russian Government, through the medium of the Russo-Greek Church, is reported as having maintained seventeen parochial schools, none of which report to the Territorial board. It is understood that very little English is taught in them. This is to be regretted, though we can scarcely complain of it under the circumstances.

There have been four schools in connection with the Roman Catholic missions, respectively, at Juneau, St. Michael's, Kozyroff, near Leatherville, on the Yukon, and at another point further up the Yukon, about one hundred miles below Nulato. The school at Juneau has been well attended. There are no reliable reports as to the others. The Church Missionary Society of London, England, has maintained a small school at Nuklukahyet, on the Yukon River. Two schools have been started in connection with the missions of the Free Mission Society of Sweden, one at Unaklaklik, on Norton Sound, and the other at Yakutat. The latter was quite recently established. A school with 155 pupils has been in very successful operation during the year, in connection with the

Presbyterian mission at Hoonah. The homes for native children at Juneau and Howkan, respectively in charge of Rev. E. S. Willard and Mrs. A. R. McFarland, seem to be accomplishing much good. It is estimated that the number of persons under twenty-one years of age within the Territory is not less than 12,000, of whom only about 1,500 are in school. The Territorial board have undertaken the establishment of three new schools at Hoonah, Douglas Island, and Ounalaska, and teachers have been engaged for them, as well as the school at Unga, which was closed last year. One new school-house was erected last year, for Sitka school No. 2. The balance of the appropriation for schools for the present year, after paying the running expenses, has been ordered to be expended in building new school-houses at Douglas Island, Kodiak, Afognak, and Karluk.

I am fully in accord with Judge Keatley, chairman of the school board, when he says :

The average attendance at the Indian schools during the last year has not been entirely satisfactory. The board has not the general co-operation of the Indian parents. Time and such influences as were possible to bring to bear on them have not been able yet to overcome their natural indifference to an education for their children. I deem it of the highest importance that a moderate sum of money be included in the annual appropriation for schools in Alaska for the payment of a small monthly salary at each village where there is a school to compel the attendance of the children.

Native policemen have been successfully employed for that purpose, and the beneficial result justifies the conclusion that a small sum of money expended in this way would accomplish more than the same money expended in any other way.

The general agent of education, in his annual report, has made certain recommendations to the honorable United States Commissioner of Education, which were indorsed by the Territorial board, which I append hereto in appendix. Those recommendations seem to me to be sound, practical, and important.

MINING AND MINERALS.

There have been filed for record in the Sitka land office 16 coal claims and 28 claims to mineral lands other than coal.

In the Juneau district the number of mineral claims filed for record is 303, and there have also been filed 20 water claims and 25 mill-sites for mining purposes. A few of these claims were adverse and must have been duplicates in the sense of having more than one claim upon the same tract of land. The coal claims each cover 160 acres, and the other mineral claims have only 20 acres each. Of all the claims filed only 8 had been patented on the 30th day of June last. I believe more patents have since been received. Meanwhile considerable activity has been manifested in the mining enterprises with moderately satisfactory results, the most extensive being in the Juneau district. The ores are more especially worked for the gold and silver which they contain, but some of them also carry lead, zinc, and other minerals, which, when reduced economically, may be found in paying quantities. The gold ores yield free gold and sulphurets mostly, and in many cases the other minerals have been entirely neglected and lost. A more economical treatment, which will eventually come into use, will make some enterprises profitable which are not so now.

A number of mills for the reduction of these free-milling ores and concentrating the sulphurets have been in operation at Juneau, Doug-

las Island, Sitka, and Berner Bay more or less of the time during the past year. The famous Treadwell mill, with its two hundred and forty stamps, has run night and day, affording results entirely satisfactory to the company, so far as can be learned. The other mills are comparatively small, some of them scarcely more than experimental establishments, and their work has been attended with inconveniences and difficulties, which, of necessity, prevented the satisfactory results which might otherwise have been realized. It is claimed, however, that the results have proved the value of the ores to be greater than that of the ore of the Treadwell mine, and that final success is assured. Capital will be required, however, to put these mines upon a paying basis, and until that is secured there can be no extensive operations, and the assurances of working success will remain unconfirmed. There are some very promising silver mines whose ores can not, of course, be reduced here. Considerable quantities of them have been shipped to San Francisco, and, it is said, have proved rich enough to warrant this expenditure. Several of these silver mines are at Sheep's Creek, near Juneau. Several parties have returned from the Yucon placer mining fields, who report limited results owing to floods and high water, stress of weather, and various accidents.

No definite information as to the results of the season's work in the interior has been received, but it is evident that patient toil and submission to inevitable deprivations are requisite, there as elsewhere, to secure the wealth which lies buried beneath the soil. One large party of miners who went into the valley two years ago have not returned, and it is supposed they went up the Tannah branch and have found something worth remaining for. The placer mining of southeastern Alaska, except in a few cases, has been carried on in a desultory, unsatisfactory manner, and, of course, with unsatisfactory results. A more thorough, systematic method will sooner exhaust the glacial deposits and drift bearing the gold, but will also prove more profitable and satisfactory in working. The suspension of work upon the Bear's Nest mill and tunnel, at Douglas Island, where so much money has been expended during the past year, is a serious blow to mining interests in the Territory, not because it proves anything as to the value of the ores, or as to the possibility of carrying on mining enterprises successfully, but because of the sensitiveness of capital, which is so much needed for the development of the mineral resources of this country. It is evident that nothing is proved as to the value of that mine itself, even.

Of the other minerals, coal is perhaps the most important and promising. Deposits of it have been found in a dozen or more places upon the islands and coasts of southern Alaska and at Cape Lisburne, in the Arctic. Samples of many of them may be seen on exhibition at Juneau and Sitka.

The coal fields of the Kenai Peninsula are very extensive, and the coal layers, three in number, one above another with layers of clay between, aggregate 15 feet in thickness at the place of the exposure upon the beach. It is convenient of access, with a good harbor, and it is estimated that it can be delivered in San Francisco for \$3.50 per ton. Its quality has been well tested, and pronounced a cannel coal of great value. Last year some 73 tons were taken to San Francisco and used in tests and otherwise. So satisfactory were the results that a large quantity has been taken out this year, and coal claims have been filed upon 3,200 acres of land. The location of these claims is about 25 miles from Port Graham, where the Russians formerly mined coal for use in the Territory. Steamers finding the need of additional supplies of coal

have for many years been accustomed to stop and fill up at Coal Harbor, on Unga Island, though the mine has not been extensively worked, and but little has been said of the quality and the facilities for mining it. A newly discovered coal mine on the Aliaska Peninsula, north of Unga, situated about a mile and a half from the north shore and 7 miles from the south shore, is exciting considerable attention just now, but I have too little information to attempt details. At Chiknik Bay, on the southern shore of Aliaska Peninsula, is a vein of coal which is worked to a limited extent. Coal of excellent quality has been found at Yakutat, but it is doubtful if it can be worked to advantage. The Cape Lisburne coal deposit, though not regularly worked, is found to be a great convenience to vessels running short while in the Arctic Ocean, and is frequently resorted to. Coal deposits, for which great merit is claimed by prospectors, have been found on Sullivan Island, Admiralty Island, Kuiu Island, several places on Prince of Wales Island, and various places in the valley of the Yukon. Which of them are of value for commercial purposes, if any of them, or whether all of them may not be so, I am unable to state.

So little attention has been paid to the marble deposits that their location has scarcely been noted. It is well known, however, that there are numerous out-croppings of limestone and marble, white and colored, samples of which, cut and polished, show superior quality. There ought, however, to be expert investigation, to judge as to the soundness of the stone and the practicability of profitable development, before any considerable money is expended. The only deposit I have been able to visit in person is one upon Baranoff Island, opposite Halleck. This is a white marble, extending about 300 feet along shore and into a mountain of serpentine rock. The exposed surface is almost pure limestone, white and slightly crystalline in its structure, and makes an excellent lime. There are some indications that it is massive and sound below the surface.

Native copper and copper ores are found, but how abundantly they exist is not known. No steps have been taken to ascertain the extent or value of these deposits.

Making due allowance for the enthusiasm of prospectors, who are supposed to be somewhat visionary and over sanguine in their expectations, I am satisfied that there are proofs sufficient to convince the most conservative of the great mineral wealth of Alaska.

FISHERIES.

The development of the immense resources of Alaska in respect to its food products found in the sea and inland waters has reached only its initial stage. The present production is very much less than might, without detriment, be obtained from the ground now occupied if proper methods were employed and discretion and intelligence were exercised by those engaged in the business; besides, there remains a much larger field of operations to be entered upon than that now utilized. Still, as now carried on, our fisheries form no insignificant or unimportant item of business. The number of salmon canneries in operation on the 1st day of July last was not less than 36, most, if not all, of the establishments being of large proportions and employing many men during the canning season. Nineteen of these canneries were built and put into operation since the last season. From the best reports obtainable at this writing, September 1, which are necessarily incomplete, it is estimated that the total pack of the season by these 36 canneries will not

much exceed 460,000 cases of four dozen 1-pound cans. The following table affords a comparison with former years:

Year.	Total pack (cases).	Year.	Total pack (cases).
1883.....	36,000	1887.....	190,200
1884.....	45,060	1888.....	439,293
1885.....	74,800	1889.....	*460,000
1886.....	120,700		

* Estimated.

Considering the greater number of canneries in operation this year than last, the estimate indicates a falling off in the catch, though it is a fact well known that the run of last year was an exceptionally large one, and it is not impossible that the late run this year may cause the statistics to exceed the estimate. There is, however, a warning in the diminished catch which should be heeded. Several causes have been assigned for the diminution in the product; the most important of these are the lateness of the run and a diminution in the number of fish, caused by overfishing and, especially, barricading the streams so that the fish could not run up to deposit their spawn. It is said that when deposited in salt-water the spawn is non-productive. A dam was built some years ago at the mouth of the river, at the Redoubt, a few miles from Sitka, and now, though the dam has broken away, comparatively few salmon run up the stream, and the business at that point is ruined. Perhaps the most striking example of the ill effects of overfishing is the partial exhaustion of the Karluk River, where last year such immense numbers of fish were taken. Captain Killeran, of the schooner *Storey*, is reported as saying that he saw "drawn with one haul of the seine 31,500 salmon, of an average weight of 9 pounds, aggregating 141 tons of fish." It is evident that the Karluk Packing Company is paying the penalty this year.

In addition to the canning enterprises probably not less than 8,000 barrels of salted salmon have been shipped from the Territory during this season, and immense quantities of dried and smoked salmon, as well as halibut, are prepared by the natives for their winter use. Perhaps 200 pounds for each family is not too large an estimate.

Halibut fishing, for local consumption, is continued through the year, and some is shipped fresh, especially in cold weather. Salted halibut are also sent east in considerable quantities. These fish are abundant all along our shores and inlets, and the attention of fishermen is beginning to be called to this fishery as a source of possible profit. The Alaska Export Company, of Sitka, has begun operations, this season, with gratifying prospects of success, exporting salt smoked halibut done up in cloth to keep the moisture and flavor from evaporating. A little halibut has been canned, but probably not much.

The codfishing industry has not taken on the proportions which the immense banks of cod all along the Fairweather grounds, about Kodiak Island, the Shumagin Islands, near Ounalaska, in the Behring Sea, and in Revilla Gigedo Channel warrants. Three companies only, so far as I know, have been engaged extensively in this business; these are all San Francisco firms, and they have confined their operations to the banks about the Shumagin Islands. They salt their fish in the hold of their vessels, transport them to San Francisco, and there take them out and dry and cure them. The dried product for 1889, it is

thought, may exceed 5,000,000 pounds. The known area and productiveness of the various cod banks of Alaska exceed those of Newfoundland and the Atlantic coast generally.

Other fish, of the finest quality, are also abundant. Great quantities of herring are taken and salted, and one establishment at Killisnoo manufactures large quantities of oil, perhaps 2,000 tons per year. The waters of southeastern Alaska teem with black bass, rock cod, sea trout, and other valuable fish, which are now only used for home consumption, but might become an article of export. The eulichon, or candle fish, which are found near the glacial streams, are dried by the natives and used for lights during their long winter evenings. They are also salted and smoked, put up like herring, and exported to a limited extent. They form a delicious article of food. There are also immense quantities of the capelin and anchovy, which are sometimes swept upon the beach in windrows, and used mainly for home consumption at the present time, but to some extent dried for export. Sardine-packing establishments might be located at various points, using the young herring for their pack.

More than forty vessels were employed in the whale fisheries in the Arctic Ocean during the last year, six of which were steam-vessels. The total catch yielded 33,268 barrels of oil and 42,200 pounds of whale-bone.

The policy generally adopted by the States and other countries of protecting their fishing industries by wholesome legal restraints and regulations is of even greater importance for Alaska, because so much depends upon the continuance of this food-supply. Its failure would cause serious suffering and hardship to the natives who depend upon it for their subsistence. These natives are now in no sense dependents or pensioners upon the Government, as are the other native tribes of the country, but if this resource were taken away there would be left but two alternatives, either assistance by the Government or starvation, especially to those living along the great rivers of the interior.

The collector, to whom was assigned the duty of preventing barricades at the mouths of rivers, has been prevented from giving that matter much attention by the want of transportation and money to defray the expenses of going about to see to it.

CONDITION OF THE NATIVES.

This topic has been discussed to some extent elsewhere in this report, and very little more need be said. It is evident that much ignorance exists as to the true condition of the native people of Alaska. Every shade of opinion has found expression, from the extravagant idea that they are little, if at all, above the wild beast of the forest, and less comfortably cared for, to the equally absurd conclusion that they are models of excellence, refinement, and culture. It is possible this great diversity of opinion is founded upon the well-recognized fact that they do present great contradictions of character, habit, and condition. They generally live in comfortable houses, some of which are tidy and attractive, while others reek with filth and offensive odors. The same persons who seem to enjoy the luxuries of a model American home, sandwich their fish, venison, white bread, berries, tea, and coffee with dried sea-weed and walrus blubber. The wearer of the finest store clothes will squat upon the floor beside one who wears his blanket and breech-cloth. They are usually free from thieving habits, but do not

stumble at falsehood and deception. They become devoutly pious, but swear like pirates. It is not strange that one who sees only one side of their character and condition should form an opinion of them different from that entertained by one who has seen only the other side. There are those who do not hesitate to impose upon visitors by retailing yarns entirely without foundation for the sake of the sensation, or that these tales should sometimes reach willing ears and be published to the world, with additions, as established facts.

During the long period of the Russian occupation of this Territory very little effort was made to elevate and change the savage character of the natives. The association, compelling submission to authority and the influence of the priests, necessarily wrought some change in their life and habits. But the chief idea seems to have been to secure as much advantage as possible, regardless of the consequences to the natives themselves. Then followed ten or twelve years of "no government and military occupation," under the American flag, which "brought nothing but rum and ruin." I would not assert the absence of good influences during this time, but there were also by far too many bad influences. The attention of religious philanthropists was finally called to the condition of these people, and some twelve years ago the beginnings of systematic work, though at first comparatively insignificant and not always well directed, began to develop, and have continued to improve, until now there are not less than fifteen establishments in the Territory which we have reason to expect will be centers of valuable, effective influence for the moral and physical elevation of the people, besides the agency of the Government schools.

Though the improvement of the moral condition of these people during the last ten years has been marked, and perhaps has been as great as could be expected under the circumstances, it must be admitted that they have not yet attained to a state of perfection; and I fear that those who assert that chastity among them is only a relative term, could easily point out specific examples to prove their position. Perhaps we should be contented to observe improvement in their demeanor, and have evidence of more enlightened views as to the obligations of marriage, and recognize more tractable, docile, and friendly dispositions, and see the evidence of savagery, shamanism, and slavery disappearing year by year. If not satisfied we should at least seek to discourage railing at the good influences because they have not accomplished impossibilities.

The physical condition of these people is in some respects greatly improved, and in others perhaps not.

The old tribal relation has generally given way. The "shaman," or "witch doctor," has lost his prestige and power except in places remote from the customary resorts of the whites. They live in better houses and have more of the conveniences of life within them. They generally dress in a more civilized and comfortable manner. Their food is more wholesome and better cooked. Their labor is more intelligent and effective for their comfort and an improved condition. They are learning the value of money and its uses. If they had the European features and talked the English language, we should often forget that the race had so lately been in a condition of barbarism and savagery.

Unfortunately, however, there is another side to this picture. While the white people have taken away their native "medicine men," they have given them no better system of remedies for physical diseases. Chronic and hereditary diseases are frightfully prevalent. Their habits of exposure and lack of hygienic knowledge are efficient aids to disease.

Consumption and pneumonia prevail to an alarming extent, with terribly fatal results. When the white physician prescribes for them, or gives them medicine, they fail of the benefits which ought to accrue, by reason of their ignorance of the conditions.

I do not now think of but one adequate remedy for this unfortunate condition of things, and that is by a course of hospital treatment, which alone could reach chronic cases, and, at the same time, would afford an opportunity for education in a direction in which it is much needed. These people are now self-supporting, and in no sense Government paupers, like the tribes of Central North America, and I would not like to see any of the independence and self-respect they now have taken away by direct aid of the Government. But I do feel strongly in favor of the establishment of governmental hospitals at places of convenient access in the Territory, with authority for the retention of patients until discharged by the hospital physicians. It would seem that this much is due the natives, whose hunting grounds and fishing places have been invaded without compensation, and whose diseases are themselves, to some extent, a heritage from their white invaders. It is also due ourselves for protection and for profit. I am sure this is the best way, if not the only way, scrofulous and syphilitic diseases can be eradicated. Besides, this hospital treatment might, and should, become the source of a potent educating influence towards personal cleanliness and a higher civilization, for the same reasons that boarding schools are more efficient than day schools, because they sequester the pupils from the demoralizing influence of the "ranch" while instilling into their minds educational and moral precepts.

Information received from the Rev. John W. Chapman, for two years past missionary at Anvik on the Yukon, and who is conversant with the country and the people through that region to the coast, discloses a reasonably good condition of things all through the valley. The Ingalik tribes, among whom he lives, are a docile, friendly people, living upon fish and game, which are sufficiently abundant to meet the present needs of the people, though if the salmon supply, which is their chief reliance, were cut off, real suffering and hardship would result. They live in comfortable houses, partly under ground, dress in furs the year round, are desirous of having their children taught English, and show an aptitude for mechanical employments. The mission is greatly encouraged by the progress they are making, but note with regret the ravages of disease, and the suffering which ought to be, but is not, alleviated by medical treatment. The Innuut tribes of the coast are apparently stronger and more rounded out in form, and seem to live comfortably, though the whisky which they obtain is doing great damage. In anticipation of the rapidly approaching cannery, which is liable to cut off the food supply of these natives, Mr. Chapman thinks the Government should take measures to have the agricultural capabilities of the soil and climate in that broad and beautiful valley tested by competent, expert farmers. The abundance of grasses renders it almost certain that cattle may be profitably raised.

PUBLIC BUILDINGS.

The public buildings of the Territory are certain old structures, coming into the possession of the Government at the time of the purchase, in 1867. They are all in a more or less dilapidated condition and in need of repairs. With the exception of two or three buildings which are rented, they are occupied as offices and residences for the Govern

ment officials and barracks for the marines. The court and penitentiary building, known as the "barracks," is a very good building for the purposes for which it is wanted, but sadly in need of repairs, and the amount estimated by the marshal as requisite to put it in tolerable condition is not too great for the necessities of the case. The other public buildings are now in the custody of the collector of customs, who offers, however, the "castle," or hospital, or both, as they may require, to the Navy Department, for barracks, if these buildings are preferred as quarters for the marines. It seems to me a reasonable outlay upon either of these buildings would make them much better and more suitable than the rooms which are now occupied. The custom-house also needs overhauling to make it safe and comfortable and respectable. The collector's estimate of expense to put it in good condition, \$1,313, seems a reasonable one. The warehouse and wharf must be repaired or serious calamity will soon result. These are now yielding a revenue by rental of \$2,027.75. The building known as the club-house, and two dwelling houses, used for rental and residences of officials, also need repairs, and estimates of expenses have been forwarded to the Secretary of the Treasury.

The quarters now occupied by the marines are too small, in wretched condition, most uncomfortable, poorly ventilated, and in every way unsuitable. Some better arrangement should be made for their accommodation at the earliest possible day.

The public buildings at Wrangell, two in number, are also needing repairs, but I have received from the custodian, no estimates of the amount of money needed. There are also old barracks at Juneau, too far gone for repairs, and a warehouse at Ounalaska, used for storing coal, in a condition of dilapidation, but I am unable to speak definitely in regard to it.

There ought to be a new court-house built at Juneau, the principal town in the Territory, and the center of the mining interests. By far the greater portion of the litigation in the district court concerns mining property and mining interests. It is thought the term of court to be held at Juneau next month will require six weeks to go through the docket. There is no suitable place there for holding court, and the expense of hiring accommodations is considerable, as poor as they are. It is now necessary to hire offices for the commissioner and deputy collector of customs, and a room for a lock-up or jail.

ADMINISTRATION OF JUSTICE.

Two terms of the United States district court were held, at which business was transacted, during the year ending June 30, 1889, one at Juneau, in November, and the other at Sitka, in February. The criminal business returnable to this court included 30 indictments, two of which were for three persons each, eight of them for the same party twice, and one of them three times. The offenses, classified, are as follows:

Furnishing intoxicating liquors to Indians.....	13
Landing without permit.....	1
Retailing without paying tax.....	3
Larceny.....	3
Obstructing officers serving warrants.....	2
Nuisance (dance house).....	1
Mayhem.....	3
Murder.....	2
Attempted murder.....	2

Nine respondents were tried by jury, of whom 8 were convicted; 12 judgments were rendered by the court on plea of guilty; sentences were passed upon 17, sentence being suspended in the other 3 cases. Three warrants were not served because the respondents were not found. On the 1st day of July, 1888, there were pending in the United States district court 18 civil cases, and 52 were commenced during the year. Of these 20 were tried, 18 dismissed, and 32 are pending. Of the civil cases 1 is in equity, to abate the nuisance of a dance house, and 5 are to eject persons occupying Government lands. In addition to the number of cases finally determined in the district court, in term time, the court disposed of and rendered written opinions, in 69 instances, in habeas corpus, motions for preliminary injunctions, and other interlocutory matters between September 1, 1888, and June 30, 1889.

In the Sitka commissioners' court, during the year, 4 civil cases and 56 criminal prosecutions were tried. Of the criminal suits, 27 were for assault and disturbing the public peace, 11 for furnishing liquor to Indians, and 5 for larceny. In the Juneau commissioners' court 15 civil and 69 criminal cases were tried; of the latter, 9 were for larceny, 46 for assault and disturbing the public peace, 7 for furnishing liquor to Indians. Of the respondents tried in the latter court, 43 were natives. There was very little business in the Wrangell and Ounalaska commissioners' courts, from whom I have no reports.

All the officers of the district court concur in the opinion that the peculiar condition of this district are such that the grand jury ought to be limited to five or seven, with a majority to indict; that the challenges to petit jurors should be cut down; that the list of qualified jurors should be extended to include men here temporarily on business; that the method of selecting jurors should be modified and simplified; that there ought to be additional deputy marshals, and that the governor should be empowered to appoint justices of the peace, constables, and notaries public.

The judge and district attorney, whose experience and observation, during their term of office, render their opinions of especial value, are emphatic in their declarations that the greatest hindrance to the rapid dispatch of the business of the court and the administration of justice is the inadequacy of the means of transportation, and the great expense and difficulty of obtaining competent jurors. There ought to be provision for transporting the court officials, prisoners, witnesses, and jurors to and from the place of holding court. This is essential to the administration of the laws in Alaska. There are a great number of native villages situated at a distance from the mail-steamer routes with no access to them except by canoe. In many instances it has been impossible to serve processes for the want of a light-draught vessel within the absolute and immediate control of the civil government without the embarrassment and uncertainty of depending upon the courtesy and convenience of those acting under the orders of another department of the Government than the one upon which the responsibility rests. A vessel of 100 tons capacity, thoroughly built and sea-worthy, with a wooden hull, filled with first-class machinery, adapted to our inland channels, with accommodations for twenty to twenty-five passengers, carrying one or two 3-inch bore breech-loading guns and perhaps a Gattling gun, would probably serve all ordinary purposes of the civil government when there is no unusual excitement or trouble.

The naval vessels in these waters, though by no means an unimportant factor in preserving order, protecting life and property, and assisting the civil government in the enforcement of the laws, are not avail-

able for all the purposes for which transportation is required. They have never been placed at the disposition of the civil government to aid in the service of process, except when they have been obstructed by some formidable combination. Besides, the light-draught vessel referred to is needed to be in use nearly all the time, and the naval vessel can not quite take the position of a police-boat or Government hack. Hence, while I do not think it safe and wise in the present condition of things in Alaska to dispense with the naval vessel, the smaller vessel is very much needed as an indispensable accessory, not only for the purposes of efficiency and promptness in the administration of justice, but also as a matter of economy to the Government.

At the November term of court held at Juneau, all the court officials, and a large number of witnesses and jurors, after having incurred enormous expense in traveling to court from places nearly two hundred miles distant, and after the court had finished its business and was ready to adjourn, were obliged to remain, on expense and under pay, for nearly two weeks longer waiting for transportation.

A warrant was issued, early in the summer, for the arrest of persons charged with assault with attempt to kill. That warrant is still in the hands of the marshal, unserved, after the lapse of about three months, because Hoonah, the village where the offense was committed and where the respondents reside, is off the line of the mail steamer's route and the marshal has no means of transportation to the place. It is scarcely just that the marshal, or the governor who is charged with the duty of seeing that the laws are enforced, shall be held responsible for the failure to execute the laws under these circumstances.

There is another difficulty in the way of an efficient administration of justice, to which I desire to call your attention here, and that is, the uncertainty which embarrasses us as to the applicability of the laws of Oregon to this district, a difficulty which might and should be remedied at the same time that modifications of the laws recognized as essential in particular cases are made. Perhaps the best method of arriving at the desired results would be by the appointment of a commission, having on it at least one good lawyer who has sustained such relation to the enforcement of the laws within the Territory as to be well informed of its peculiar conditions and needs, whose duty it should be to prepare for the consideration of Congress a code of laws, simple and short as possible, but comprehensive enough to cover the present needs of the district. I recommend this matter to your especial consideration.

It is noticeable that in the list of offenses for which prosecutions were brought there is none for violation of the laws prohibiting the sale and manufacture of intoxicating liquors to others than Indians, while it is a notorious fact that it is furnished, without restraint or concealment, in all the towns where there are white residents. Inquiries as to the reason elicited the reply that prosecution would be of no avail—that no jury in Alaska would convict for furnishing intoxicating liquor to white people.

TRANSPORTATION AND MAIL FACILITIES.

The peculiar physical conformation of Alaska and its great extent of territory make its conditions of accessibility exceptional to the general rule of new countries. It has an area of 580,000 square miles and a coast line of 25,000 miles. It has above eleven hundred islands, with the most intricate and extensive system of channels and waterways. Its southern mainland and islands are covered with lofty, snow-capped mountains and interminable and tangled forests. Its limited areas of agricult-

ural land are separated from each other by vast reaches of water or by barren and impassable rocks. It has three hundred and twenty Indian villages, scattered here and there over the whole region of islands and mainland. There are hundreds of mining, fishing, manufacturing, and other business enterprises of white settlers, many of whose establishments are large and have a great amount of capital invested in them. There are less than a dozen miles of graded road in the Territory, and through most of the country a wagon-road is almost an impossibility. As a matter of course our only resource for transportation and communication is by water.

With this condition of things, is it unreasonable for the civil government, which is charged with the responsibility of keeping the General Government informed of the state of affairs in all this Territory, with administering the laws, guarding and fostering all these important business interests, preserving peace and tranquillity among the native tribes who have been only partially brought out of their original barbarism and savagery, and generally representing the National Government itself among them—is it unreasonable for this civil government to ask for a light-draught vessel, of perhaps a hundred tons capacity, to be entirely under its control, and for its use, in the discharge of the duties devolving upon its officers?

I believe there is no difference of opinion among residents within the district and visitors who have given the matter consideration, that this addition to the facilities for efficient administration of the government is an absolute essential. It is generally supposed that legislation by Congress, at least a special appropriation, is necessary for this purpose. If so the people unite in requesting that this matter be laid before that body for their consideration.

On the 30th day of June last there were eleven post-offices in the Territory of Alaska, at eight of which there was regular mail service. The Pacific Coast Steam-ship Company is under contract to deliver semi-monthly mail at Loring, Wrangell, Juneau, Douglas Island, Killisnoo, and Sitka. Their route of travel passes within about 7 miles of Methakahtla, a village of about 1,000 people, with church, school-house, saw-mill, stores, etc. The natives of this village, to a considerable extent, are educated and speak the English language. The mail contract does not require the steam ships to stop at Methakahtla, and the company very naturally declines to take the trouble, and a few weeks ago the post-office, which had never been visited by an official mail carrier, was discontinued. At Howkan and Klawak there is a monthly mail, carried by a small boat from Wrangell. The post-offices at Afognak and Kodiak have received mails occasionally by the favor of the Alaska Commercial Company, who have business establishments there. Aside from these places, the three hundred and twenty villages of the Territory are obliged to depend upon chance vessels, canoes, and private conveyances for all the mail communication with one another and the outside world. It is true, that the native population, generally, would not avail themselves of mail facilities if they had them. But there are undoubtedly more than 10,000 people who do desire to communicate with others by mail; and with forty-eight schools in session and more provided for the next year, the number of those desiring to use the mails is constantly increasing.

It is with great reluctance that I refer to the inadequacy of the mail facilities accorded to the District of Alaska. The governor's annual report has repeatedly called attention to this matter without avail, and whether the policy of neglect which has hitherto prevailed was the re-

sult of inattention or reckless disregard of the remote province and her people, it matters little. The embarrassment and depression of isolation, to say nothing of the serious interference with success in administering the government and protecting and fostering the industries and business enterprises of the country, are almost sufficient to prevent the progress which the pessimistic carper asserts to be impossible.

That the mail service in the Territory will not at the present low rates of postage and with all the official mail franked pay the expense of carrying is no sufficient answer to complaints of neglect and injustice. Citizens should be accorded protection and safety without regard to cost. The efficiency of the Government and the laws should not be impaired by want of reasonable mail facilities. I do not believe that the strictest economist would demand the deprivation of mail facilities to any considerable section of the country which is inhabited and filled with business enterprises of importance and large capital, as Alaska is, or where the protection of the people and the successful administration of the laws and the government depends so much upon information to be derived in this way better than any other if he could be made to understand the situation.

The people of Alaska are not excessive in their demands. They do feel that a weekly mail to southeastern Alaska, in its present condition of development, is not too much; that four mails per year, bimonthly during the eight best months, ought to be provided from Sitka to Ounalaska; that four mails should be regularly carried from Ounalaska to St. Michaels, and thence up the Yukon; that perhaps a winter mail should be carried from Kodiak, across country, to the Yukon district.

The lease of the seal islands is about to expire, and a new lease will undoubtedly soon be made to the Alaska Commercial Company or other parties. This company now has business establishments which require several visits of their vessels to different points, from Ounalaska to Prince William Sound, during the spring and summer. It is probable that some arrangement could be made by which at least four of these vessels should go and return by way of Sitka, and carry mails. If no arrangement of this sort is previously made, this service should be included as one of the conditions of the contract or lease, though a separate arrangement through the Post-Office Department would be preferable.

Under the first contract to carry the mails from Port Townsend to Sitka, each round trip cost the Government \$9,000. Now each trip costs less than \$750. Those who are supposed to be well informed, think that a large amount of local business would speedily be developed by a regular line of conveyance from Sitka to the westward, and that the amount of subsidy required to carry the mails would be reduced to a very small annual sum in a short time.

As an illustration of the embarrassment resulting from the lack of mail facilities between Sitka and places to the westward, it is proper to mention the following: The Territorial board of education meet at Sitka in June and January. The reports and accounts of teachers must be approved by this board before they will be allowed and paid by the commissioner of education. Sending forward their reports at the earliest possible moment after the close of their schools, June 1, the teachers to the westward can only get a hearing at the January meeting of the board. If their reports and accounts are approved, the board recommends to the commissioner of education that these teachers be paid their salaries; and if everything is found complete and satisfactory, and there is no slip of the mails, and if the teacher

has not died in the mean time, he will receive pay for his services in a little more than a year after his work is finished.

Some time last August a letter was received from a missionary stationed in the Yukon district, complaining that there is urgent need of an officer in that district who can administer oaths, and, in case of great emergency, order arrests and administer light punishments. With all possible haste I issued to him a commission as justice of the peace. That commission, however, is still in the mails, and he will not receive it before July next, at the earliest. Then he should file his oath of office with the secretary of the Territory, which will take some months more, if no time is lost; and if he is qualified to act in his official capacity under fifteen months from the time his letter of complaint was written, there will be cause for congratulation.

These are not fanciful suppositions nor isolated instances, but illustrations from actual occurrences, and I sincerely hope the attention of the proper department may be called to this subject and that some action may be speedily taken to remedy these evils.

IN CONCLUSION,

It seems appropriate to briefly summarize the suggestions of the foregoing discussion, which I consider of the highest importance to the welfare of this Territory; and without determining in what cases legislation is required to effect the desired results, I recommend them to executive and departmental consideration for such action as may be deemed wise and expedient in the premises.

(1) Power should be conferred upon the governor of the district to appoint justices of the peace, constables, and notaries public, without compensation except by fees, either defining the limit of jurisdiction or leaving that matter to the joint discretion of the governor and judge of the district court.

(2) There should be provision for the extension of a modification of the land laws to Alaska, so that titles may be acquired by pre-emption, or otherwise, to homesteads, mill sites, small farms for agricultural and horticultural purposes, and to lots in town sites; also for the assignment in fee simple of lands, fishing grounds, and town lots, to the natives without purchase.

(3) There should be provision for the purchase of timber, for lumber and wood, upon the public lands, either by stumpage or otherwise, so that all persons may legally use or sell lumber, wood, and manufactured products within or without the Territory, as they may find it convenient.

(4) Measures should be taken to regulate the fisheries in the district, so that wasteful and unnecessarily destructive methods shall not be employed, and that the rights and proper privileges of the natives, so necessary to their support and continued independence, shall not be infringed upon.

(5) Government hospitals, for the treatment of chronic and hereditary diseases among the natives, should be established and maintained at places of convenient access within the Territory, with authority for the retention of patients until discharged by the hospital physicians.

(6) There ought to be at least a weekly mail service in Southeastern Alaska, and not less than four mails each way between Sitka and St. Michael's, by way of Ounalaska and local points, during the eight months best suited for traveling in each year, with possibly a winter mail to the Yukon district overland from Kadack.

(7) A light-draught, rapid running, wooden-hull steamer of one hun-

dred tons burden, with accommodations for twenty to twenty-five passengers, ought to be provided for the use of the civil government and put under the control of the governor, who is charged with the responsibility of the enforcement of the laws and of looking after all the interests of the Territory.

(8) A court-house should be built at Juneau, the principal town in the Territory, where most of the litigation arises, for the accommodation of the court and for offices of the Government located at that place.

(9) The laws of Oregon, which are declared to be the laws of Alaska so far as they are applicable, are so ill adapted to the requirements of this district, and so much uncertainty arises as to their applicability, that it has become absolutely essential there be some modifications thereof, especially as to the court methods and grand and petit jurors. And to that end, it is recommended that a commission be appointed to prepare a code for the consideration of Congress, short and simple as possible, but comprehensive enough to meet the needs of the Territory, one member of the commission at least to be some good lawyer who has had relations to the administration of the laws in the district.

(10) At least three additional deputy marshals should be provided for, to be located in the discretion of the marshal, and the residence of the U. S. commissioner, now located at Ounalaska, should be changed to Unga, where he would be of more service and equally accessible for the Behring Sea region.

(11) I am strongly of the opinion, which is shared by all thinking people, that the isolated condition of this Territory, its large population, its extended area, with such a wonderful coast-line, its immense business interests and more immense undeveloped resources, its already great and rapidly-increasing shipping, and many other considerations, demand some sort of representation in Congress. And yet, in my judgment, the time has not arrived for a full Territorial organization and government. It must also be admitted that an election would be a farce of the most ludicrous character, and not to be recommended. How, then, can representation be secured? The Representative should be one well informed as to the condition and needs of the district and its people. He should reside there during the whole time that Congress is not in session. During the session, or at least a portion of each session, he should be within reach of committees, Senators, and members who desire information. He should be empowered to officially represent the district upon the floor of the House and in other ways as a Delegate from a Territory.

It has been suggested, and there seems to be no serious objection to it, that the governor of the district be required by law to be present at each session of Congress and have the duties and privileges of a Delegate from a Territory. So far as his duties here are concerned there is no obstacle. Business is largely suspended through the winter and traveling is out of the question, and his presence for a few months may, without detriment, be dispensed with here. While at Washington he might be of much service to the District and useful to Congress. But it does not seem reasonable or just that he should be expected to go there on a leave of absence to attend to the public business, neither is it dignified for him to be hanging about Congress as a lobbyist, nor to be subjected to humiliating intimations that he is loafing and absent from his post of duty. He should go there, if at all, because the law requires him to do so as a part of his legitimate work.

LYMAN E. KNAPP,
Governor of Alaska.

To the PRESIDENT.

APPENDIX.

OFFICE OF GENERAL AGENT OF EDUCATION IN ALASKA,
Sitka, Alaska, September 20, 1889.

HON. AND DEAR SIR: In accordance with your request, I have the honor of submitting the following memoranda on education in Alaska for the year ending June 30, 1889.

There are in the District of Alaska 14 day-schools supported wholly by the Government, 4 boarding-schools aided by the Government, and a number of mission schools carried on by different religious societies. The day-schools report a total enrollment of 1,040, and two of the boarding-schools 195. The other two boarding-schools are so distant that they have not yet been heard from this season. It is estimated that there are in Alaska 12,000 persons under twenty-one years of age; of these about 1,500 are in school.

The day-schools are located at Howkan, Metlakehtla, Klawock, Wrangell, Sitka, Killisnoo, Juneau, Douglass, Haines, Kodiak, Afognak and Unga. The boarding-schools are located at Sitka, Carmel on the Nushagak River, Bethel on the Kuskowin River and Anvik on the Yukon River.

The boarding-school at Sitka is under the auspices of the Presbyterian Church, Carmel and Bethel of the Moravian Church, and Anvik of the Protestant Episcopal Church. The school at Howkan, Miss Clara A. Gould teacher, had a total enrollment of 105; Metlakahtla, Wm. Duncan and native assistant teachers, 172; Klawock, Mrs. M. L. Currie teacher, 39; Wrangell, Mrs. Wm. G. Thomas teacher, 90; Sitka No. 1, Miss M. Desha, A. Kashevarof, and Miss Cassia Patton teachers, 67. Sitka No. 2, Miss V. Pakle teacher, 51; Killisnoo, Miss May Ransom teacher, 22; Juneau No. 1, Miss R. A. Lee teacher, 22; Juneau No. 2, Miss A. R. Hill teacher, 58; Douglass, Mrs. Anna R. Moon, 94; Haines, Dr. F. F. White, 128; Kodiak, W. E. Roscoe, 68; Afognak, J. A. Wirth, 55. The school at Unga was closed during the year on account of the inability of the teacher to reach the place.

The Industrial Boarding School at Sitka reports teachers and employes: 13 white, 6 native, and 1 Russian; pupils, 170; of whom 106 were boys and 64 girls. Of the boys 17 received instruction and practice in the shoe-shop, where they made 117 pairs of boys' nailed shoes, 93 pairs of sewed shoes, 27 pairs of girls' sewed shoes, 9 pairs of fine-sewed shoes for teachers and others, 718 pairs of shoes half-soled, 327 pairs heeled, and 515 patched; 20 boys worked at the carpenter trade, erecting 4 houses, besides repairing houses and furniture; 4 boys worked in the blacksmith-shop, repairing pipe, stoves, machinery, etc.; 6 boys have worked more or less in the bakery, making into good bread, on an average, 900 pounds of flour per week; several boys have been employed in the steam laundry, where the washing averages 1,000 pieces per week. Last winter some of the boys netted a large fishing seine; others made some pieces of furniture, and one did a good job of coopering. From 25 to 30 of the boys have received instruction in the cornet band. Three of the boys are east, one at Mount Hermon, Mass., in training for mission work, and two at Captain Pratt's Indian school, Carlisle, Pa., where they are learning the tinsmith's and printer's trades. Four of the girls of the school are under special instruction at Northfield, Mass. These latter are at the expense of Mrs. Elliott F. Shepard, of New York.

The school has also in connection with it a hospital and a small illustrated monthly paper called the "North Star." Arrangements are under way for the establishment of a steam saw-mill and planer, also a cooper-shop, as a part of the regular industries of the school.

This school has the largest plant and is doing better work than any other school in Alaska.

The boarding-school at Anvik being 3,844 miles from San Francisco, its post-office, and receiving but one mail a year, has not yet been heard from for this year's report. The same is true of Bethel, which is 3,029 miles from San Francisco, its post-office, and has but one mail a year. Although Carmel, the fourth contract school, is 2,902 miles from its post-office, San Francisco, yet, owing to the passing back and forth of

the schooners in the employ of the several salmon canneries in its neighborhood, it has several mails during the summer. It reports a total enrollment of 25.

The Alaska Commercial Company, in accordance with its lease of the Seal Islands, maintains a school both at St. Paul and St. George. No reports received.

The Russian Government, through the medium of the Russo-Greek Church, is reported as having 17 parochial schools.

The Roman Catholic Church, with bishop's residence at Victoria, B. C., is establishing schools at St. Michael, Kozyrof, near Leatherville, and at a point between Anvik and Nulato, on the Yukon River. These are in charge of Jesuit priests.

The Church Missionary Society, London, England, have a mission school at Nuklukahyet, on the Yukon River, in charge of Rev. and Mrs. T. H. Canham.

The Free Mission Society of Sweden has a mission school at Unalaklik, in charge of Rev. Axel E. Karlson, and one at Yakutat, in charge of Rev. Albin Johnson and Rev. C. Hendrickson.

The Board of Home Missions of the Presbyterian Church has a school of 155 pupils and a mission at Hoonah, in charge of Rev. John W. McFarland; a mission home at Juneau, in charge of Rev. and Mrs. E. S. Willard and Miss E. Matthews, and a mission home at Howkan, in charge of Mrs. A. R. McFarland.

A new school-house was erected for Sitka School No. 2, and buildings were ordered for Douglas City, Kodiak, Afognak and Karluk.

I have recommended to the honorable the U. S. Commissioner of Education:

First. That arrangements should be made enabling the general agent to visit the schools in western Alaska.

Second. That a district superintendent should be appointed for the Sitka district.

Third. That Congress be asked to arrange a permanent fund for the Alaska schools.

Fourth. That Congress be asked to provide an obligatory-attendance law.

Fifth. That a small allowance be allowed for the employment of native policemen, whose duty it shall be to see that all the children are in school.

Sixth. That the honorable the Secretary of the Interior be requested to ask from Congress for the ensuing year the sum of \$75,000 for the education of the children of Alaska, without distinction of race.

If you wish fuller information on any points relating to education in Alaska it will give me pleasure to supply it as well as I can.

With great respect, I remain yours truly,

SHELDON JACKSON,
U. S. General Agent of Education in Alaska.

Hon. LYMAN E. KNAPP,
Governor of Alaska

REPORT OF THE GOVERNOR OF ARIZONA.

EXECUTIVE DEPARTMENT,
Phoenix, Ariz., October 5, 1889.

In accordance with your letter of instruction dated July 19, 1889, I herewith submit my annual report for the year ending June 30, 1889.

POPULATION.

The last census of the United States, of 1880, gave Arizona 40,440. By the census of 1882, and at the height of the mining excitement, the following census was taken:

Purported population and official vote for the year 1882, by counties.

County.	Population.	Vote.	County.	Population.	Vote.
Yavapai.....	27,680	2,177	Graham	4,229	563
Pima.....	17,427	1,804	Yuma	3,922	311
Cochise	9,640	2,724	Mohave	1,910	455
Maricopa	6,408	891	Gila	1,582	710
Apache	6,816	961			
Pinal.....	3,362	672	Total.....	82,976	11,268

It will be seen that Yavapai and Yuma Counties are supposed to have cast one vote to about thirteen inhabitants. Pima cast one to ten, while Apache, Maricopa, and Graham Counties cast about one to seven, notwithstanding the fact that they were largely Mormon; Cochise and Mohave Counties cast less than one to four, and Gila about one to two inhabitants.

It is generally conceded by those who are informed that the census of 1882 can not be relied upon, in fact that gross errors exist in it. It is a fair, if not a full, estimate to say that there is one vote to every six inhabitants in the Mormon counties and one vote to five inhabitants in the other counties for the actual vote cast, except Pima County.

The following is the official vote from the office of the secretary for Delegate to Congress for the years named:

County.	1882.	1884.	1886.	1888.
Apache.....	961	1,255	910	835
Cochise.....	2,724	2,349	1,721	1,673
Graham	563	1,013	844	899
Gila	710	601	514	433
Maricopa	891	1,446	1,539	1,990
Mohave.....	455	534	516	470
Pima	1,804	1,734	1,564	1,524
Pinal	672	748	789	865
Yavapai	2,171	2,578	2,132	2,546
Yuma	311	263	298	303
Total	11,262	12,491	10,827	11,538

Taking the vote of 1888, and estimating as above stated, would give perhaps the best approximate estimate obtainable of the population of the Territory at the present time.

County.	Voters in 1888.	Ratio of voters to population.	Present population.
Apache.....	835	6 to 1	5,010
Graham.....	899	6 to 1	5,394
Maricopa.....	1,990	6 to 1	11,940
Cochise.....	1,673	5 to 1	8,365
Gila.....	433	5 to 1	2,165
Mohave.....	516	5 to 1	2,580
Pima.....	1,564	6 to 1	9,384
Pinal.....	789	5 to 1	3,945
Yavapai.....	2,132	5 to 1	10,660
Yuma.....	303	5 to 1	1,505
Total inhabitants.....			60,948

The increase in Maricopa County from 891 votes in 1882 to 1,990 votes in 1888 is very largely in the city of Phoenix and its surroundings, and the vote of one to six is entirely too large for that county, while in Pima County, especially about Tucson, there is a large Mexican population, many of whom do not vote.

When it is considered that the estimate is on the actual vote cast, and not on the registered vote, I think it must be considered fair, and I believe that the coming census will so show.

The registered vote of the Territory is about 16,000, and allowing one vote to four, as a general allowance, about the same result is reached.

The principal changes since 1882 have been the loss of the mining population from Cochise and Gila Counties, caused by the closing of their large mines and mills, which has been about balanced by the gain in Maricopa County in the growth of the city of Phoenix and the surrounding agricultural districts. Other portions of the Territory have not changed materially, though there has been a falling off in mining and an increase in agricultural pursuits all over the Territory, each of which, however, will be hereafter separately considered.

THE MORMONS.

Morally and politically they are an unwelcome and a dangerous element. Morally their teaching and encouraging, if not actually practicing, polygamy is against all established Christian law, moral or religious.

Arizona had a law disfranchising all who practiced, taught, or encouraged polygamy. The first legislative act signed by my late predecessor was the repeal of that act. I request and urge that Congress repeal the repealing act and re-establish the above Territorial law.

Politically the Mormons seem to have adopted the plan of sending colonies or "stakes" to the surrounding Territories in sufficient numbers to form a balance of power between the two political parties. They are willing to trade with either, but remain true only so long as the interests of the church are best served. The church is their law, and all other law is subservient to the orders of the church. They are therefore a most dangerous and unscrupulous factor in politics, without regard to party. Four years ago they voted for the Republican Delegate to Congress; two years ago and last year they voted for the Democratic Delegate, in payment for the repeal of the above-referred-to dis-

franchising act passed by my late predecessor. Who they will next vote for will depend upon who will or can make them the best offer or do them the most service.

We have in this Territory two "stakes" in Apache County, and one in each of the counties of Graham and Maricopa, numbering in all about eight thousand, or about two thousand to each one of the four "stakes."

Again I urge upon Congress the re-establishing of the act disfranchising Mormons by the repeal of the repealing act, and I urge you, Mr. Secretary, and the President, to use your influence and to make your recommendations to that end.

It is a very poor answer (even if it is admitted, and it certainly is not by many) to say that they are industrious and energetic.

TAXABLE PROPERTY.

The following statement, taken from the county assessor's reports for the yearending December 31, 1888, gives the aggregate taxable property by counties:

County.	Valuation.	County.	Valuation.
Apache.....	\$2,348,111	Pima.....	\$3,820,280
Cochise.....	3,381,701	Pinal.....	1,816,383
Graham.....	1,568,094	Yavapai.....	5,564,545
Gila.....	1,058,862	Yuma.....	751,148
Maricopa.....	4,929,705		
Mohave.....	1,336,863	Total.....	26,575,692

This assessment has been raised by the Territorial board of equilization to about \$30,000,000, as against about \$26,000,000 for last year. This is a very fair increase in the taxable property of the Territory, notwithstanding the number of head of stock and the general valuation of property is placed far below the actual value, and railroads being assessed at only \$7,000 per mile, including rolling-stock and all other property.

BONDED INDEBTEDNESS.

Bonded indebtedness of the Territory.....	\$652,000
Outstanding warrants, about.....	100,000
Total Territorial debt.....	752,000
Bonded indebtedness of counties.....	\$1,497,500
Outstanding warrants.....	403,410
City and other indebtedness, about.....	250,000
Total county, city, etc.....	2,150,910
Total Territorial, county, and city indebtedness, about.....	2,902,910

The average interest now being paid is about 8 per cent.; none of the indebtedness being at less than 6 per cent., much of it at 8 per cent. and 10 per cent., while all outstanding warrants bear 10 per cent.

In this connection I will hereafter, Mr. Secretary, ask you, and through you the President, to recommend to Congress the passage of an amendment to our Territorial funding act that will allow the Territory to issue long-time bonds, say fifty-year bonds. I am assured that they can be negotiated at probably 4 per cent., certainly not to exceed 5 per cent., provided Congress authorizes Arizona to issue such bonds.

I shall ask that the Territory be permitted to borrow enough to allow

the counties, cities, etc., to borrow from the Territory sufficient to pay off their present indebtedness, thus enabling them, too, to cut down their rate of interest, they to pay the Territory for the amounts they borrow at the same rate the Territory pays. This will restore them all to a cash basis, and this alone will be a great saving. By so doing a certain saving of 3 per cent. can be made on, say, \$3,000,000, equal to \$90,000 annually.

The Territory and counties have always met their interest promptly. By allowing us to cut down the interest nearly one-half, which the above plan carried out would accomplish, it will be seen that we have resources enough to allow us to subsidize the two north and south railroads that we so much need and of which I treat under "Railway enterprises."

SETTLEMENT OF LANDS.

Land entries for the year ending June 30, 1889.

	Number.	Acreage.	Amount.
Original homestead entries.....	124	32,815.71	\$4,109.43
Original desert-land entries.....	171	66,545.78	28,975.49
Original timber-culture entries.....	155	22,221.12	2,017.00
Original pre-emption entries.....	252	40,320.00	756.00
Declaratory pre-emption statements.....	78	.....	234.00
Excess receipts.....	24	57.50	88.75
Pre-emption final proof.....	61	8,055.38	18,938.96
Final homestead proofs.....	60	8,792.69	528.00
Commuted homestead final proofs.....	20	2,692.89	6,191.11
Final desert-land proofs.....	48	20,853.57	22,625.51
Grants to railroads entered.....	1858	297,248.21	3,716.00
Valentine-scrip filings.....	1	40.00	1.00
Declaratory statements, soldiers' and sailors' homestead.....	2	320.00	6.00
Military bounty land-warrants.....	1	160.00	4.00
Mineral applications.....	49	403.44	490.00
Final mineral entries.....	18	271.77	1,390.00
Mineral protests.....	1	.....	10.00
Total.....	.....	500,798.06	90,031.25

The above table of land entries furnished from the Tucson and Prescott United States land offices gives the land business of the Territory for the time stated. Increased irrigation and transportation facilities are an absolute necessity before much more settlements can be made. Where irrigation exists there is an over-production, for want of transportation, as stated under "Railway enterprises."

An enforcement of the act of Congress of October, 1888, known as the irrigation law, would be the worst calamity that could possibly happen to Arizona. The press and the people of the Territory are unanimous in their opposition to it. It must be remembered that Arizona without irrigation is a desert, and must be treated as such. She is exceptional in her characteristics.

If the above irrigation law was supplemented by a change in the land laws that would permit the settler to give half his lands and \$5 an acre for a "water right" for his remaining half, payable on reasonable terms, together with the yearly payment of \$2 per acre for maintaining dams, reservoirs, canals, etc., then the above law would serve a useful purpose.

The pre-emption and homestead laws are not suitable for the settlement of Arizona's desert plains; it is an absolute impossibility for a settler to exist miles from water or other means of subsistence. The "desert-land law" alone is suitable, and if the settler was allowed, as above suggested, to give half his entry for water, then under such circumstances the

limit, if thought necessary, might be reduced to 320 acres; or if corporations were permitted to take the alternate quarter-sections upon the building of reservoirs, canals, etc., necessary for the reclamation of the lands and to charge \$5 per acre for "water rights" and the yearly payment of \$2 per acre for the maintaining of the reservoirs, canals, etc., or under other proper restrictions, then the above irrigation law might be of service.

Why should not Congress be as liberal to such corporations as it has been time and again to railroad corporations. The one helps every acre of land within its lines; the other, under present circumstances, is valueless to the lands and will continue so until some change is made that will enable settlers to live along their lines.

In many States Congress has given outright the "swamp lands," the cost and difficulty of redeeming which are certainly no greater than with Arizona's plains.

In the one case, sickness and disease forces the settler to give up his claim or die; in the other, starvation or thirst causes the same result.

It would not be without precedent, then, if Congress should donate these desert plains to Arizona. With proper laws they would soon become the garden and paradise of America, instead of the barren wastes they now are. Be liberal with Arizona and she will return your liberality a thousandfold.

It is well to remember that Arizona does not enter as a competitor with other portions of the United States for any of their agricultural products; on the contrary she will become a consumer, and will in turn offer at a lower price products, all or nearly all of which are now imported from abroad, and thus add largely to the self-supporting feature of our great country. These are not theories, but established facts, that all familiar with Arizona must admit.

Now it is "poor Arizona," and why? Congress has overrun her with railroad grants and Indian reservations, with land laws made for the fertile valleys of Ohio and Indiana. Give Arizona laws suitable to her circumstances, and she will be an empire before her eastern sisters fairly wake up to her existence.

The following, from my predecessor's report to the last Territorial legislature, exactly voices the views of the people of this Territory:

It is not proposed by the Government to do more than to show the area of land that can be reclaimed and the cost of such reclamation. The serious part of the business, the building of the canals, the construction of the dams, reservoirs, etc., is left to private capital and enterprise. The question for us to consider is, can this work be accomplished by community capital. The cost now to bring water over land is from \$5 to \$10 per acre, in most localities the latter figure. While it would be desirable to have every quarter-section of land a home for the immigrant, yet, as a matter of fact, this is not so important as to have these lands reclaimed, made productive, and thus add to the tax-roll of the Territory. The idea of reserving the public domain to the poor settler is attractive in theory, *but impracticable as applied to the desert lands of Arizona*. Fifty men look over a canal that will irrigate 8,000 acres, the construction of which will cost all the way from \$40,000 to \$80,000, and in the mean time they must live upon desert land, where they have to haul water frequently for miles, and buy everything, even hay and grain for their stock, if they attempt to keep any, for a year or two, before the canal is completed, laterals dug, and water can be turned upon the land for cultivation. Under these conditions the man of moderate means would be apt to think his fortunes would be advanced by investing in some other locality. The true interest of Arizona will be best subserved by allowing the desert entries to be made as at present—640 acres of land as an incentive for men able to do the work to undertake the reclamation of these lands—and I hope that you, the representatives of the people, will protest against any abridgement or repeal of the desert-land law. (See memorial No. 1, fifteenth legislature, protesting against said repeal.)

LAND GRANTS.

Our Territory has a number of land grants that aggregate a very large area. Most of them have been reported on by the surveyor-general and are now before Congress. It is to be hoped that Congress will at an early day take action thereon. Non-action tends to very greatly unsettle all the country around these grants. In most instances the surveyor-general has cut down the limits claimed by the grant owners, and outside the lines thus outlined settlers will and do claim the right to settle, while of course the grant owners attempt to hold to their outer limits, and this often causes serious trouble, and there never will be quiet until the titles are finally determined. Then, too, there are some that are entirely fraudulent and should be wiped out; among these is the pretended Peralta grant, claiming 150 miles long by 50 miles wide, and covering the very best portion of the Territory. I have had occasion to very carefully study this grant, and my very decided opinion is that it is an entire fraud, and that the Government should bring criminal suits against Reavis and those directly aiding him as heirs to the supposed title.

ATLANTIC AND PACIFIC RAILROAD LANDS.

The failure to have these lands surveyed virtually withdraws from settlement one-half of the entire belt of land 100 miles wide by the full width of the Territory, except the small portion now surveyed. It withdraws it because a settler does not know which land is railroad and which is Government, and he therefore does not begin his improvement.

On the other hand, the railroad sells large tracts or bodies, and the purchaser really gets double the amount he buys, for, as no settler dares take the chances, the Government portion remains unoccupied and serves, as before stated, to only double and add value to the railroad company's lands, which, in addition, remain free from taxation until surveyed. So, by the lands remaining unsurveyed, the Territory is losing settlers and taxes, while the railroad company and their assigns are getting double the lands and going free from taxation.

COMMERCE AND THE PROGRESS OF RAILROAD ENTERPRISES.

Except the shipment of ore, Arizona can not be said to have any export commerce; not that she is without articles to export, but for the reason that railroad transportation rates are too high to permit it, there being no competition or restriction to the rates allowed to be charged. They are prohibitory on all bulky articles.

We need and must have two lines of north and south railroads, to connect with the two east and west transcontinental railroads, and these two north and south railroads restricted to moderate rates. This will place the transcontinental lines in competition; besides, it will open up our own resources to a wonderful degree. For instance, within 100 miles north of Salt River Valley hay is worth \$20 to \$40 per ton, depending on the season of the year, while in said valley it can be bought at from \$5 to \$6 per ton baled, and from \$2.50 to \$3.50 in the stack. And the same is true of the grain, fruit, and other products of the valley.

While lumber in Phoenix is worth from \$45 to \$60 per 1,000 feet, less than 200 miles from here, and within this Territory, it is worth only from \$12 to \$16 for the same classes.

The connecting railroad from the Atlantic and Pacific Railroad through Prescott and Phoenix to the Southern Pacific Railroad is an essential road and must be built before long. It makes the exchange through that section of the produce of the South with the lumber and ores of the North, besides making available a number of large mines, as to size and quantity, but just too low of grade or value to stand present rates of transportation. The opening up of a mining country is almost certain to cause the finding of other new and valuable mines.

The second north and south railroad should be from or near Flagstaff, on the Atlantic and Pacific Railroad, through Globe to the Southern Pacific Railroad at Tucson. What is said of the other north and south road through Prescott and Phoenix can equally be said of this road. Starting at Flagstaff, this road would run through miles of splendid forest, ample to provide lumber for all future uses of Arizona, if it is properly protected, which I hereafter separately treat of.

These two railroads are an absolute necessity to the immediate wants of our Territory. We want the lumber and coal of the north in the south; we want the produce of the south in the north of our Territory. Now our lumber for the south is coming from Washington Territory and the Gulf coast of Texas, while California supplies the produce to the north at a haul of over a thousand miles. Cheapen these products, and even now there are many mines that are not now being worked that will then be profitably worked. Give the increased and cheapened transportation, and hundreds of other mines will be worked and hundreds of new ones discovered and opened. I can not too strongly impress upon you, Mr. Secretary, and through you upon the President and Congress, the absolute duty owed to Arizona and her people that she be allowed, under reasonable restrictions, to subsidize, by bonds and otherwise, the building of these two north and south railroads. Without them it means stagnation in all branches of our business, and with them it means advancement and prosperity.

With other things that are certain to follow, allowing us to build these two roads will more than double our population and wealth within five years from the time they are completed, and it is safe to say that, together, they will not exceed 400 miles in length.

The following table gives the names of the different railroads in this Territory, with the number of miles owned and operated by them:

	Miles.
Southern Pacific Railroad Company	383.
Atlantic and Pacific Railroad Company	393.277
Arizona and New Mexico Railroad Company	41.
Tucson, Globe and Northern Railroad Company	10.
Central Arizona Railroad Company	35.
Prescott and Arizona Central Railroad Company	73.30
Maricopa and Phoenix Railroad Company	34.95
Arizona and Southeastern Railroad Company	38.
New Mexico and Arizona Railroad Company	87.80
Total	1,096.327

AGRICULTURAL DEVELOPMENT.

In connection with this subject I submit a letter to my predecessor from Hon. J. DeBarth Shorb, of Los Angeles, Cal., one of the two commissioners at large of the State board of California on viticulture. His views are worthy of the highest consideration.

RAMONA, CAL., July 18, 1888.

DEAR SIR: In compliance with your request, I herewith submit to you my views of the Salt River Valley, agriculturally, horticulturally, and viniculturally. It may be granted without argument, or appeal to historic records, or the proof furnished in various parts of the world at the present time, that the country, which is a natural wheat country, producing a fair yield of average quality of wheat, is one that is capable of supporting a very large population to the acreage; and, if should be added to this a capacity of producing the other cereals in equal excellence, a greater value necessarily attaches to such a country, and its lands must in time increase in value and its owners in wealth and importance. That quality of land and climate which produces good wheat may be then considered as forming the solid basis on which the natural wealth of the country may be founded; and just in proportion as it is capable of producing other products of value, either of necessity or luxury, is its natural wealth increased. Only a small area of the cultivable world produces the higher soil productions, which may be considered luxuries as far as the maintenance of human life is concerned, and yet have by reason of their general introduction and use become necessities, the deprivation of which would make the lives of civilized men almost intolerable.

Now, to the practical man, what are the facts presented for his consideration respecting the Salt River Valley?

First.—The climatic conditions are not excelled anywhere; the temperature, either in summer or winter, is faultless, and the health of its people could not be improved. There are no malarious conditions to produce fevers in summer, nor are those rapid changes, incidental and common to other parts of America in winter, producing colds, pneumonia, and consumption, present at Phoenix and Salt River Valley. The excessive heat of the summer months is more imaginary than real, being in fact not as hot as it is in many parts of the Sacramento, San Joaquin, and upper portions of Napa or Sonoma Valley of California, and in no wise equaling the Mississippi Valley. The quality of the temperature being entirely dry, makes even the hottest day tolerable in the sun, while a lower temperature in any of the Eastern States or Canada would not only be intolerable, but dangerous to human life.

Second.—I have seen wheat growing under the very best conditions in the finest wheat-producing sections of America, and am familiar with the records of competing sections in Europe, Asia, and Egypt, and have no hesitation in asserting that Salt River Valley surpasses the world in its wheat production, both in quality and quantity. With equal truth can I say the same as to its barley and rye. Kern Island, in Kern County, of this State, is acknowledged to be the best alfalfa section in California, and yet, in comparison with the production of the Salt River Valley, it can not be considered. Horticulturally considered, the Salt River Valley, I believe, excels any other portion of the world known to civilized man. Every variety of fruit trees I saw growing showed such evidences of luxuriant health as are not observable in any other section that I am familiar with, personally or by statistics. A close examination of the growing trees failed to show any disease due to climatic or soil conditions, and as to insect pests, that are so troublesome and injurious elsewhere, you are entirely free from. This fact is almost as important a factor in establishing a great fruit industry as are the soil and climate. The best fruit of any kind or variety always sells at high and remunerative figures, even on so-called glutted markets, and the best fruit can not be grown on unhealthy or insect-ridden trees.

Third.—The viticultural possibilities of your section are beyond any man's comprehension. From all the evidence furnished me by the growing vines, I must say here is the natural home of the vine, for they attain a greater size in the short space of two years than they do in this State in five years, the yield corresponding to their growth and size. As for the quality of the wine so far produced, the methods of manufacturing are so primitive and crude, the knowledge of the wine men so very limited, that it would be manifestly unfair to express any judgment upon the wines generally. I directed what should be done with one barrel of so-called white wine, as a matter of experiment, and, upon examination of it a few months later, found, as anticipated, it had turned into a sherry of most excellent quality.

I have no hesitation in saying that the Phoenix country is the only port and sherry wine country of America, so far known; and with trained judgment in the selection of proper varieties of grapes adapted to your conditions, wines of the highest commercial value, if scientific methods be substituted for those now in vogue in the man-

ufacturing of the wines will be the inevitable result. As a raisin-producing country all the conditions are present to make it the best in the world. You can not only grow the raisin grapes to perfection, but you have the best climate to cure them in, and under no circumstances will recourse be necessary to artificial heat in completing the curing process. In the production of early and late vegetables, and shipping to the Eastern markets, you might employ one-quarter of the entire valley most profitably. The natural quality of the soil, its perfect topography for irrigation, and its phenomenal smoothness make it more easily irrigated than any country I ever saw. In point of early production of all you can raise, some four or six weeks earlier than any portion of this State, you have an advantage scarcely capable of computation. The world over, the early markets are always the best.

The irrigating facilities are not excelled anywhere, and this system of agriculture, which insures the laborer against all loss by reason of the uncertainty of the seasons, can be more economically followed in the Salt River Valley than anywhere in Europe or America. Considering every factor that goes to make a country great and prosperous, I believe you are more particularly blessed than any other portion of the world's surface. All that Egypt can claim in the way of natural advantages, which made her the granary of the world for ages, you may also claim in greater abundance, and while civilization had its origin in the Nile by reason of its agricultural conditions, it should have its highest achievement in the Salt River Valley for the same reason.

Very truly yours,

J. DE BARTH SHORB.

The want of transportation has cut down the spread of agriculture, as it is almost impossible to find consumption for what is now raised in the agricultural portions of the Territory. Hay stacks of two and three years of age are rotting, while 100 miles north of the Salt River Valley it can hardly be had, or, as before stated in connection with railroads, is worth \$20 to \$40 per ton, depending on the season of the year. With a demand and reasonable transportation, agriculture and horticulture will vastly increase.

Fruit culture is beginning to be carried on, especially raisin grapes. No place in the world offers better facilities for the growth of the vines or for the drying of the grapes. Mature vines will produce 7 tons of grapes per acre that will yield 3 tons of raisins. The climate is so dry that there is no danger of losing the raisins even though a rain should fall, as has been proved by experience time and again. Summer showers are of short duration. Then, too, the grapes ripen earlier than in California.

The raising and drying of figs can be carried on with wonderful success, as fig trees grow to perfection in this country.

The growing and canning of fruit generally can be most successfully carried on here with the advantage of two or three weeks' earlier crops than in California.

In the Salt River Valley, in and about Phoenix, there is room now for thousands of settlers, if they will turn their attention to fruit raising for any of the above purposes.

The following is taken from the report of Lieut. W. A. Glassford, chief signal officer for the Territory of Arizona:

GENERAL FEATURES OF ARIZONA.

No portion of the Union probably presents such favorable conditions for the catchment of water for agricultural and other purposes as does Arizona.

In its great area, nearly double that of the six New England States, are presented physical features peculiarly adapted to the construction and maintenance of an immense system of irrigation based on the storage of water by artificial reservoirs, and the supply of which it will be the endeavor of the writer to show is abundantly provided for by rain-fall.

Were it possible to obtain a bird's-eye view of the Territory the observer would see spread out before him an area equaling Italy in size, consisting of a series of mountainous plateaus, ranging in height from 7,000 feet in the northern part of the Territory to a few hundred feet in the southwestern portion.

Of these plateaus, those of the north will be found interspersed with mountain chains and deep cañons. In some places volcanic cones rise over 5,000 feet above the plateaus, while cañon gorges are cut as deep below.

To these characteristics the plateaus of the southwestern portion of Arizona present strong contrasts, consisting as they do of level valleys, mesa or table lands, gradually sloping off towards the Gulf of California. Some of these are basins of what have been, at comparatively recent periods, immense inland seas. In places the loss of altitude is so rapid that immense cañons have been cut by erosion through the mountain chains and plateaus, and immense basins have been formed along the watersheds of all the permanent streams.

These cañons and basins are of great depth and area, and present unrivaled facilities for the construction of a system of artificial reservoirs similar to that established by the British Government in India, where the Himalayas present much the same characteristic features.

The streams which in the north flow through cañons whose precipitous sides tower thousands of feet above the surface of the water as they reach the southern mesas roll sluggishly along with barely sufficient fall to prevent their sinking in the sand. It is in the valleys along the latter portions of the rivers of Arizona that are to be found rich alluvial lands unequalled in fertility and productiveness.

It is no uncommon sight to observe heavy rains in the mountains, or at the summits of ridges, while down their steep slopes flow great volumes of water, although at the spot where the gauge is located frequently not a sprinkle would fall. It is for this reason the data represents perhaps the least approximate quantity of actual precipitation.

The total amount of the summer rains is considerably in excess of that of winter, but comes in almost daily showers. It is rare that they occur as general rains over the whole face of the country, but instances are not lacking when the rain has fallen in down-pours, and occasionally the term cloud-bursts is not inappropriately descriptive. On the other hand, the winter precipitation is heavy and general while it lasts. It comes like that of the Pacific States, with storms conventionally known as cyclonic or low barometric areas, and the intervals between their occurrence are likewise characterized as cloudless. The variability of the winter rains in Arizona is about the same as that of the seasonal rains in California, that is, in quantity and frequency in a ratio to the intensity and recurrence of barometric disturbances. The effect of the rain-fall is obviously of an intermittent character.

High and low water occur in the streams during the rainy seasons, and during the periods of drought some streams become feeble rills or disappear altogether, except over some places where a solid rock stratum brings it to view. This disappearance of the streams is due to the great quantity of detritus, sand, and silt that has washed into the bed of the streams on account of the sudden down-pours and the steepness of the mountain sides.

This feature has given Arizona a reputation for drought and sterility largely undeserved. These conditions, resulting in intermittent (and for part of the year underground) streams, with large volumes in winter, show the need of storage reservoirs to conserve the supply.

The most casual observer of the streams in Arizona during the winter is impressed with the fact that enough water pours down these rivers to water many times as much land as is possible of reclamation. These rises in the streams force us to repeat that the rain-gauge records only show a fraction of the actual precipitation that can be relied upon for water storage.

STOCK AND STOCK RAISING.

Stock raising is and has been for many years one of the leading industries in this Territory, especially the breeding and raising of cattle, and, notwithstanding values have declined almost constantly since 1885, it still ranks very high and may be considered to be second in importance to that of mining.

The climate of Arizona, varying as it does from semi-tropical to temperate, is peculiarly adapted to the breeding of cattle. Except on the very highest ranges of mountains, snow never falls to remain more than a day or two, and no weather ever occurs requiring artificial shelter; hence cattle roam over mountain and plain during the entire twelve months without expense for artificial feed, the young are born and reared at all seasons, and the universal result is a higher percentage of increase than is obtained in any of the other great cattle-raising districts of the country not similarly situated.

The growth of the herds has therefore been almost marvelous, and as a result the entire grazing area is nearly if not fully occupied where water can be obtained.

There having been a universal decline in the price of beef, commencing about the year 1885 and continuing to the present time, cattle on the ranges have suffered a corresponding decline, yet the increase in numbers has been so great that the assessable value of the aggregate herd is well sustained.

Spaying of female cattle is being practiced to a limited extent, as yet experimentally, and will doubtless soon become the general practice, by the adoption of which two objects are secured, to wit, an increase in the number available for beef, and the improvement of the remaining herd.

Much has already been done for the improvement of the grade of cattle by the introduction of blooded bulls of the best breeds, and at the present time but few herds can be found, except in the southern counties bordering on Mexico, that do not show a high dergee of improvement through the influence of blooded bulls.

For three or four years previous to the winter of 1888-'89 the rainfall in this Territory was very light, and in consequence, with herds rapidly increasing, considerable apprehension prevailed in regard to the future welfare and promise of this most important industry, and many range men, especially those who embarked in the business during the period of its highest prosperity, threw their herds upon the market, tending greatly to the reduction of prices. During the winter of 1888-'89 and the summer following rains have been plentiful, the grazing country is now clothed with an abundance of feed, and an era of great prosperity must follow in consequence.

HORSES.

Whatever has been said or can be said of Arizona as a cattle-breeding country may be truthfully stated concerning it for the breeding of all domestic animals.

Until recently the breeding of horses has commanded but little attention, except those of native stock, but for the last few years stallions of the best breeds have been numerously imported and a very marked improvement is now apparent.

The following table, compiled from the assessment rolls of the various counties, gives the number of domestic animals and the assessed valuation thereof for the years named. These figures are, however, doubtless much below the actual number and value of the domestic animals in the Territory at the periods given.

Description	1888.		1889.	
	Number.	Value.	Number.	Value.
Cattle	512,333	\$5,720,526.14	583,500	\$4,232,427.89
Horses	34,072	893,178.00	38,066	1,036,627.50
Sheep	197,237	276,299.50	228,882	363,363.50
Swine	2,185	6,090.50	3,444	8,324.00
Mules	2,295	81,541.00	2,512	100,708.00
Asses	1,045	10,855.50	1,044	11,159.50
Goats			3,541	4,790.50
Total		6,988,490.64		5,757,400.89

SANITARY CONDITIONS AND REGULATIONS.

Contagious diseases have never gained a foothold within the borders of this Territory, owing largely, doubtless, to the excellence of the climate and the purity of the water, yet very much credit must be given for protecting the Territory against the introduction of pleuro-pneumonia and other diseases from infected districts to the vigilant and earnest efforts of the sanitary live-stock commission. The following extracts are taken from the report of the Hon. I. N. Towne, chairman of that commission :

The stock industry of the Territory was at that time [March, 1887] threatened with an invasion of pleuro-pneumonia. * * To prevent the introduction of this disease was the first work of the commission. * * At the date referred to this disease had gained a footing in nearly every one of our Northwestern States, including Texas. * * Under the conditions of open-range grazing a successful quarantine would be next to impossible. The work of the commission was therefore confined to a system of very careful inspection on the lines of railroad communication. * * The commission next gave its attention to cattle imported from the republic of Mexico, where importations were allowed from all parts of the world without the least sanitary restriction. Finding our Territorial laws in conflict with Federal authority in regard to dealing with foreign countries we appealed to the authorities at Washington, and through their co-operation have in force on the Mexican border a most practical and efficient inspection law. * * The health of all domestic animals throughout the Territory is in the best possible condition, and cattle shipped from this Territory to Eastern States are no longer required to have a specific bill of health.

While the value of cattle has been for some time past and still is very low, the general condition of the industry could not be called other than fairly prosperous.

MINING.

Mining in Arizona for the past year has had a very healthy growth, being mostly done by miners on their own or on leased mines, commonly called "chloriding," though at Bisbee, in Cochise County, the Copper Queen Mining Company has built a railroad connecting their property at Fairbanks with the New Mexico and Arizona Railroad, a distance of 38 miles.

Prospecting has been very largely on the increase, bearing with it the discovery of many new and profitable mines, among others the Congress mine in Yavapai County, the Harqua Hala mines, and the Eureka district in the western portion of the Territory, together with many paying prospects in Pima and Cochise Counties.

In Pinal County the Reymert Mining Company is preparing to operate its group of silver mines on a largely increased scale, and they promise soon to eclipse in their output the product of the famous Silver King mine in its most prosperous days. It is also understood that the Silver King Company is now producing sufficient ore to warrant running its reduction works at Pinal and that the mill will soon be set in motion. The Mammoth gold mines lately passed into the hands of an English syndicate who are now increasing their facilities both for milling and mining, and at an early day will commence the reduction of gold ore from their mines on a "mammoth" basis.

With increased transportation facilities it would undoubtedly very largely increase.

The following from the report of J. F. Blandy, Territorial geologist, states a few pertinent facts :

The following table is compiled from official sources :

Year.	Copper.	Gold.	Silver.
	<i>Pounds.</i>		
1887	17, 720, 412	\$830, 000	\$3, 800, 000
1888	31, 797, 300	850, 000	3, 560, 000

As very little of the ores has been smelted in the Territory, the returns of the production of lead can only be obtained by tracing it to the various smelting works to which it has been sent, and this has not been done.

To this list in the future will be added the items of coal and building stone.

That greater progress in the development of our resources has not been made has been due to the want of transportation facilities, and next to the arid nature of the country. Although we have 1,096 miles of railway within our boundaries, yet but three mining points have been directly touched, two of these being reached by branch lines built by mining companies for their own use.

The ores have to be hauled over indifferent mountain roads for distances varying from 10 to 100 miles to railroad points, the result of which is that no ores of an average value of less than \$50 per ton can be shipped at any profit to the miner even from the nearest points.

Furthermore, the ores being mostly of a refractory character need to be brought for treatment to central points, where water is abundant and fuel can be obtained at reasonable prices.

This result will be gained when we shall have railroads built through the mining districts, and connecting with the "through lines" which cross the Territory.

In connection with mining, I would suggest that the present United States mining law be so amended as to require for each and every location, or relocation, that a shaft or adit 10 feet deep be required within a reasonable time, say ninety days, or, in case of relocation, 10 feet further sinking of any shaft already there or further running of any adit already there. Section 2401 General Statutes of Colorado on location, and section 2411 General Statutes of Colorado on relocation, have been found to give the greatest satisfaction in that State. I suggest them as amendments to the United States law, in place of the first year's annual labor.

The objection to Senator Stewart's bill is that relocations will be made just as they are now, only, as under the 1866 law, a locator will use some person's name, and then get a deed from that person, and therefore it would not in practice change the present objectionable ways. By the Colorado law work must be done, and it has tended very largely to develop the country; it is a simple, practical, and just requirement, and made into law by miners themselves. I most earnestly urge its adoption.

MILL-SITE RESERVOIRS.

As an assistance in mining I recommend a law that will authorize the taking of ground for mill-site reservoirs. At present, to obtain a mill site a mining company must, as a rule, go a very considerable distance to find non-mineral land and the necessary water, often at great expense, or even practically preventing the working of the mine; whereas, could they be allowed to build a reservoir and have the land condemned or given to them to the edge of their water line, it would give great relief and do no great damage, if any. In case of flooding of other property proper restrictions could be placed in the law.

FORESTS AND PRODUCTION OF TIMBER.

Arizona, under the popular idea, is supposed to have not much if any forest, but as a matter of fact she has a very large area, running along the line of the Atlantic and Pacific Railroad, being about 200 miles in length and about 60 miles in width, or fully 12,000 square miles, of excellent forest for lumber.

Pines are the principal trees, growing to 150 feet in height and from 5 to 6 feet in diameter, making a splendid article of lumber. Spruce is also found at the higher altitudes, that also makes good lumber. Yellow and red juniper are found, that make a fine ornamental wood capable of a very fine polish. Walnut, ash, and oak are found; walnut and ash usually in the damp ravines. Walnut trees bear well, but the nut is smaller than in the East. Mesquite and iron-wood are common, and in many portions of the Territory cover considerable areas, and are excellent for fuel; in fact, all middle and southern Arizona depend on these woods for their fuel. The iron-wood tree is of two varieties, white and black, and its specific gravity is so great that it sinks in water.

The mountain tops all over the Territory above 7,000 or 8,000 feet are covered with good pine forests, and are to be found in every county in the Territory.

LUMBER.

Along the line of the Atlantic and Pacific Railroad are at the present time a number of saw-mills capable of sawing a very large quantity of lumber per day, but lack of transportation to the markets that are nearest to them prevents their producing anything near their capacity.

A great amount of complaint has been made about cutting timber off from Government lands. In my judgment some reasonable law and regulations should be established by which necessary lumber for general consumption and sale can be taken from Government lands. It certainly is not right or the intention of Congress to force us to get lumber from Washington Territory and the Texas gulf coast instead of from our own forests; yet theoretically it amounts to that.

EDUCATION.

The school system of Arizona is an excellent one, and is being liberally and fairly carried out. In every part of the Territory children are offered the advantage of free schools.

The Territory has a Territorial university in process of construction, the portion for the school of mines being now nearly completed. There is also a Territorial normal school, that has been established for several years and is doing well.

Every town and county in the Territory is divided into school districts. The attendance is good, and the teachers employed are fully up to the average of teachers in Eastern public schools.

UNIVERSITY AND SCHOOL LANDS.

There will be no time in the history of Arizona when these lands can be used with greater advantage for the objects desired and for the benefit of the Territory at large than the present. It is to be hoped that Congress will see fit to permit the Territory, under reasonable restrictions, to control these lands as fast as the public surveys are extended over them, and that they can be segregated from the public

lands. Many of these sections are being now farmed by settlers without paying any revenue to the Territory. I think the right to lease and receive revenue in that way might safely be given.

LABOR.

The labor supply is about equal to the demand. Mechanics receive from \$3 to \$6.50 per day; common laborers, \$1.50 to \$2; miners, \$2.50 to \$3.50 without board; domestic servants, \$25 to \$35, and farm hands \$30 to \$40 per month and board. Chinamen are monopolizing the raising of all vegetables, keeping of restaurants, wash-houses, and very largely supply the demand for house servants.

In the southern portion of the Territory Mexicans and Indians can be hired at much less rates than figures above given, and when properly handled and in certain kinds of work they do very well.

INDIANS.

Except in a superficial way, the governor has no means of knowing anything about the condition of the Indians. Since the removal of Geronimo and those immediately connected with him there have been no Indian troubles in any portion of the Territory, and from present appearances there is no cause for apprehension of trouble.

INDIAN RESERVATIONS.

It is to be hoped that the Government will cut down the size of the Indian reservations, especially the San Carlos Reservation. More than half of this reservation is useless to the Indians, and yet contains valuable mining sections that could be very valuable, especially the coal fields at the southwestern corner of the San Carlos Reservation. These coal fields are the only ones in southern Arizona. The ground is absolutely useless to the Indians, while the coal is of the greatest importance to all classes of business. It seems to be placing an unnecessary hardship on the prosperity of the country to refuse to allow it to be used. A line along the southern boundary of that reservation, run along the first bluffs south of the Gila River, would give to the Indians all the agricultural land and in no wise do them any injury. I strongly urge the reduction of this reservation, even if no reduction is made in others.

PUBLIC BUILDINGS.

There are none in the Territory, though the Government pays rents enough to more than equal the interest that would be paid on the amount required for building the necessary buildings at Tucson, Phoenix, and Prescott. The following annual rents paid for the use of public offices at Tucson is from the Tucson Citizen of recent date:

Surveyor-general's office	\$720
Land office (paid by local officers)	600
Special agent's office (local officers)	120
Deputy collector of customs	240
Special agent for Department	360
Post-office (donated)	720
Offices of district court clerk and marshal	1,000
United States attorney (paid by local officers)	240
Deputy quartermaster	600
Two paymasters	840
Jail and keeping of prisoners (paid to Pima County)	5,000
Total	10,440

I strongly urge on Congress the building of public buildings at Tucson, Phoenix, and Prescott, as being strictly in the line of economy. The Government has never spent a dollar in the Territory for any Territorial improvements of this character.

ARTESIAN WATER AND RESERVOIRS.

I most earnestly urge on Congress the benefits that may be derived from artesian water. There are hundreds of thousands of acres of Government land that can only be reclaimed in this way, as no water sheds exist from which a supply of water can be had. An appropriation for this purpose would, if successful, be of the greatest benefit both to the Territory and the Government; or, if the Government would give the alternate sections or quarter sections of the land redeemed by private enterprise by artesian wells or by building reservoirs for the collection and retention of surface water, either from the streams or at other points, this would encourage enterprise and be of the greatest value to our Territory. A law of this character would not cost the Government a dollar, as, with railroad lands, the even sections could be sold at double the price.

CITIZENSHIP FOR THE TERRITORIES.

I hope that Congress will realize that the Territories ought to be allowed the franchise and right to cast their vote for the election of the President of the United States, and that the Territorial Delegate should be allowed a vote in Congress. Why not? We are just as much citizens of the United States as are any other equal number of people, and because we live outside of State lines should certainly not deprive us of our national rights.

LEGISLATION.

Before I came into office the honorable Attorney-General of the United States, March 16, 1889, rendered an opinion, "That legislation after the sixty consecutive days was nugatory." This opinion cast a very grave doubt over almost the entire laws of Arizona, from the fact that most of its important legislation had occurred after the sixty consecutive days, from the time for the meeting of the twelfth, thirteenth, fourteenth, and fifteenth legislatures, and was, therefore, seriously affected by it.

Seeing this I first asked permission of the President of the United States to call "an extra session of the legislature," under a Territorial law that had been on our statute-books ever since the organization of our Territory. The Attorney-General decided that this Territorial act was illegal, and the President therefore declined to authorize the call.

Upon receiving this decision, and believing that the opinion of March 16 was entirely a technical one, that did not take into consideration the circumstances, condition, and customs under which Arizona's laws had been enacted, I attempted to obtain a change of opinion from the Attorney-General, by asking an opinion from him on the constitutional convention act, that under his opinion would be illegal, in the following letter:

PHOENIX, ARIZ., *June 26, 1889.*

DEAR SIR: I see by the telegraphic and other newspaper reports, though there has not yet been time for me to receive it, that the Attorney-General has decided the question submitted by me, viz, the right of the legislature to legislate for a constitutional convention.

The right to legislate being established, a new question arises that I did not at the time observe, and that is, as to whether the legislature was itself a legal body at the date of the passage of that act.

The occasion for these questions arises from the fact that this act was passed since the adjournment of Congress and must be acted on before the meeting of the next Congress, and the fact that the questions arise under the United States law governing the legislature.

Originally our legislatures met the first Monday in January.

In 1881 the eleventh legislature met the third day of January. The consecutive sixty days expired March 3, yet the legislature continued to the end of the sixty days (legislative days), and during this time, on March 5 (see session laws) passed an act making the second Monday in January the time for the meeting of future legislatures. Under the opinion of the honorable Attorney-General to your Department of March 16, 1889, this would be invalid. I take it for granted that the opinion means, that the legislature had ceased to exist at the end of the consecutive days.

Under section 1850, United States Revised Statutes, "all laws passed by the legislature and the governor" would remain laws until disapproved by Congress. If it had ceased to be a legislature, then it would require an act of Congress to give it vitality, and no such act of Congress has been passed. The mere silence of Congress would certainly not make the acts of an illegal body laws.

If this act of the eleventh legislature was not law, then the fourteenth legislature should have met on the first Monday in January, which would have been the 3d of January, and the end of the sixty consecutive days would have been March 3; yet on March 10 (see page 514 Arizona Revised Statutes for date of approval) the fourteenth legislature changed the time to the third Monday in January. (See page 517, section 2880, A. R. S.) There has been no act of Congress passed in relation to it. This act, too, would then seem to be invalid, and the legal time for the meeting of the legislature would remain the first Monday in January.

This year the first Monday in January was the 6th of January, and the fifteenth legislature should have adjourned March 6, as the end of the legal sixty consecutive days; yet this act for the constitutional convention was not approved by the Governor until March 21, and, as before stated, since the adjournment of Congress, and must be acted on by me prior to the meeting of Congress.

This is an important question, for upon it depends nearly the entire laws of the Territory.

By section 1850, United States Revised Statutes, Congress has apparently reserved to itself the right, between constitutional laws, which shall remain laws, for it says: "All laws shall be submitted to Congress, and if disapproved shall be null and void."

The questions involved would seem to be:

First.—Does the legislature cease to exist, as the legislative assembly, at the end of the sixty consecutive days?

Second.—Can the acts of an unauthorized body, as such assemblage would be at the end of its legal existence, ever become law without direct legislation by Congress or other legislatures?

Third.—If it continues to be a legislative body are not all otherwise constitutional acts law until disapproved, as provided for in section 1850, United States Revised Statutes, without regard to the question of time?

I fail to find anything in the United States Statutes that declares or intimates legislation to be illegal after the sixty days. Members of the legislature are elected for two years, *i. e.*, the members of the fifteenth are elected for a term ending January 1, 1891.

I am advised by a member of the tenth Idaho legislature that Secretary Carl Schurz, probably December, 1878, or January, 1879, in answer to the then secretary of Idaho Territory, took the latter view and that your Department records will so show.

I will be very greatly obliged to you if you will give or obtain for me other advice in relation to the subject-matter of this letter at your earliest convenience, as steps must soon be taken.

Respectfully,

LEWIS WOLFLEY,
Governor.

Hon. JOHN W. NOBLE,
Secretary of the Interior,
Washington, D. C.

It will be observed that I called attention to the fact that "this is an important question, for upon it depend nearly the entire laws of the Territory." He, however, re-affirmed his March 16th opinion, and as a result our entire legal system is most seriously affected, and we require immediate relief.

I have prepared a bill, which I submit separate from this report, on this and the following subjects, for which I ask the approval of yourself, and that the President will recommend its passage by Congress at an early day.

The final clause of section 1841, United States Revised Statutes, says that the governor "shall take care that the laws thereof be faithfully executed," but there is an entire absence of any power to execute the above requirement.

Prior to two years ago there was and always had been a Territorial statute (see section 1097, page 177, compiled laws of Arizona, 1877) that gave the governor the power of removal for cause. My late predecessor, the fourteenth legislature, and the "code commission"—all Democratic—disagreed about a number of the appointees, which resulted in sharp practice on all sides, and, without his knowing it, the "code commission" dropped out the above power of the governor, so that now I find myself powerless to carry out the above provision. I ask that the above-mentioned section 1097 be re-established by Congress.

In the preparation of the "code," Revised Statutes of Arizona of 1887, the commission repealed by chapter and title almost all existing laws, re-enacting some, changing others, and substituting entire new laws for others.

In this way the militia law was repealed and no new law enacted, though the duties and requirements of the militia are found in many other acts. I therefore believe that it was entirely an oversight, owing to the hurried manner and short time within which the entire laws were gone over. I ask that Congress re-establish the old militia law, known as chapter 21, compiled laws of 1877, and the acts amendatory thereto.

Under the head of Mormons I have already explained the necessity of re-establishing act No. 87, page 213, of session laws of 1885. An act supplemental to chapter 24 of compiled laws of Arizona, entitled "Of general and special elections," approved March 12, 1885.

Our legislature will not meet for over a year. In the meantime we have no appropriation bill for the years 1889 and 1890, except one that is directly questioned by the opinion above, and that for the same reason the district court of the second judicial district of Arizona has also cast a serious shadow on. The standing of our Territorial bonds and warrants is being seriously impaired, and in many other ways serious injury will continue unless Congress affords us relief.

It is impossible for the governor to carry out "the faithful execution of the laws" unless he has some direct power for emergency. The slow process of courts almost gives the incumbent an increased length of official life rather than hastening his removal. It could not have been intended to hold the governor responsible, except the power be given him to enforce the law, and I find myself entirely without the power to execute it.

The militia law and the Mormon test-oath are, in my judgment, essential laws. In asking Congress to confirm the acts passed after the "consecutive days," and to annul the repealing acts relating to the other laws, I am in no sense asking new legislation by Congress; practically it is only asking Congress to exercise its retained right—that is, the right "if disapproved shall be null and of no effect." (See sec. 1850, U. S. R. S.) The right to approve remains inherent in Congress.

As examples of my inability under existing circumstances "to see that the laws are faithfully executed," in April last the superintendent of the Territorial prison released a prisoner whose term of life sentence had been commuted by my predecessor to twelve years' confinement,

and, given the allowance for good behavior, I calculated that his time had not expired by fully one year and a half. I wrote to the superintendent several times and received no reply; after several months the board of prison commissioners did reply, and by their reply proved I was correct. After fully five months of time the superintendent finally concluded that he would retake him, and without a requisition brought him back from California by threats.

I am powerless to remove the superintendent, or even to cause the board of commissioners to do so. The same superintendent, regardless of a direct law to the contrary, uses the convicts outside of the prison walls to do work for private parties.

I called on the board of supervisors of Maricopa County for a report of their returns to the board of equalization, and notwithstanding the assistant district attorney of the county gave them an opinion that it was their duty to send me their report, they refused to send it at the time I asked it.

The board of commissioners of the insane asylum called on me to countersign a warrant for asylum expenses. I refused to blindly sign, and requested them to furnish me with a detailed statement and vouchers supporting the warrant; this they refused and brought a mandamus suit. The supreme court of the Territory sustained my right, and since that time, June last, they have entirely neglected to do their duty or even attempt to, to the very great injury and the economical running of that institution.

By reason of such things as the above the affairs of the Territory are unnecessarily unsettled, and to the serious injury of the Territory.

TERRITORIAL SALARIES.

I would respectfully urge that Congress appropriate for the payment of the salaries of governors and secretaries of the Territories the amounts now named by law, viz, \$3,500 and \$2,500, respectively.

The present appropriations of \$2,600 and \$1,800 are inadequate compensation for the services which these officers are required to perform, and do not re-imburse them for the expenses which they incur in conducting the affairs of the government and the payment of the costs of supporting their families, which is much greater in the Territories than in most of the older settled communities.

UNDEVELOPED RESOURCES.

Arizona has a great future before her. No equal portion or area of territory in the United States has a greater variety or more fertile resources.

She has lumber and coal to supply her wants for years to come. Every section of the Territory abounds in gold, silver, copper, and many other valuable minerals.

Her average rain-fall, as shown by Lieut. Glassford's report, is, if properly cared for, abundant for agricultural and horticultural uses.

Her mountains and uplands give thousands of acres of grazing lands for cattle, horses, sheep, and other stock.

Canning of beef and tanneries can be most profitably carried on to an unlimited extent. Our canned meats cost more than is paid in the East, and yet here is an unlimited supply of beef at first cost, and there are ice machines in all the towns of the Territory for refrigerating. Tanneries can be successfully carried on, as is proved by the one re-

cently established at Tucson. The herb from which the tannin is obtained is found in abundance all over the Territory, and the leather made from it is of an excellent quality. Just at present Tucson offers the best field, as a tannery is already there in successful operation, and the largest ice machine in the Territory is also there, and it has an excess of capacity to fully supply all the refrigeration necessary for even a reasonably large cannery.

What Arizona needs and must have is competitive railroad transportation, with at least two railroads running north and south; cheap transportation, the same as in the Eastern and Middle States. Railroads, in my opinion, are blind to their own interests by keeping up the high rates charged in this Territory for general freight and local fares. A more conservative policy would build up the country and in a short time, even at moderate rates, give them greater returns.

Very respectfully,

LEWIS WOLFLEY,
Governor.

Hon. JOHN W. NOBLE,
Secretary of the Interior,
Washington, D. C.

APPENDIX.

Average rain-fall, by months and years, Arizona Territory.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Antelope Valley	1.93	.64	3.14	.00	.00	.00	2.14	.34	.10	2.08	2.53	2.95	15.85
American Flag							.44	3.16					
Apache, Fort	1.25	1.76	1.70	.80	.47	.73	4.04	4.45	1.58	1.43	1.11	1.76	21.08
Arizona Dam								1.70					
Ash Canyon	1.80	.05	2.61			1.20		.82			1.03	4.50	
Ash Creek								.47					
Bangharts							3.23	2.40	.40				3.02
Barstow (Cal.)	.14	.04	.93	.00	.12	.00	.00	.13	.07			.95	
Benson	.38	.56	.54	T	.08	.29	1.65	2.39	.91	.60	.31	.67	8.38
Bisbee								.73	3.79				
Bowie, Fort	1.27	1.96	1.25	.17	.28	.72	3.28	2.89	1.26	.63	.74	1.38	15.83
Buchanan, Fort	1.74	2.01	.20	.60	.18	.82	5.25	6.16	2.03	1.16	1.09	1.15	22.12
Buckeye								.51					
Burks	.15	.52	.13	.08	.00	.00	.02	1.41	.57	.02	.41	.70	4.01
Calabasas							3.40						
Casa Grande	.46	.15	.36	.06	.07	.07	.31	.88	.30	.34	.32	.71	4.03
Cedar Springs	2.16	1.27	1.40	.25	.15	.47	1.61	1.88	.62		2.55	2.50	
Chloride							.14						
Colorado Camp	.15	.07	.25	.08	.02	.00	.03	.25	.00	.30	.50	.20	1.85
Cooley's Springs								2.95					
Cottonwood							3.70						
Coolidge (N. Mex.)	.60	.90	.60	.40	.40	1.20	2.40	.40	.40	.90	.40	.70	9.30
Crittenden							2.70	2.32					
Crittenden, Camp	.68	1.15	.70	.26	.50	.31	6.01	4.88	.94	.23	.37	1.81	17.39
Date Creek	.79	1.35	.82	.87	.13	.24	3.19	3.78	.29	.46	.64	1.20	13.76
Duncan							1.40	1.02					
Defiance, Fort	.89	.56	.68	.67	.52	.74	2.46	2.73	1.86	.70	1.16	.87	13.84
Dudleyville							2.46						
Eagle Pass	1.84	1.80	1.01	.27	.10	.04	2.53	5.42			2.84	3.13	
El Dorado Canyon (Nev.)	.80	.27	.63	.54	.00	T	1.58	.06	.05	.14	.84	1.64	6.55
Fairbanks							5.15	2.57					
Flagstaff				.75	.65	.30	5.00	.65	1.10	4.20	2.35		
Gillette							1.62	1.05					
Florence	.88	.70	.94	.38	.07	.02	1.59	2.05	1.06	.72	.47	1.04	9.92
Globe	2.15	1.11	2.33	.43	.00	.38	1.91	1.28	3.28	2.39	3.61	2.18	21.05
Goodwin	2.41	1.82	1.04	1.30	.00	.69	3.35	6.78	3.80	1.39	1.19	2.81	26.58
Grand Central Mills							4.99						
Grant, Fort	.90	1.18	1.00	.57	.25	.66	3.42	3.34	1.86	.75	.87	1.51	16.31
Harrisburg (Utah)	.10	2.94	1.17	.93	2.20	.10	2.67	.65	.30	.10	1.92	.06	13.14
Holbrook	.50	.76	.66	.52	.16	.26	1.30	1.28	1.09	.82	.96	.69	9.00
Huachuca, Fort	1.45	.92	1.94	.22	.30	.61	5.31	2.28	.96	2.12	1.97	1.38	19.46
Huachuca Mountains	2.37	.05	2.61	.14	T	1.56	4.44	2.64	1.07	.49	3.46	1.42	20.25
Hualpai, Camp	.09	1.92	.00	1.62	.63	1.28	3.60	7.02	3.15	.45	.28	.87	20.89
Keno, Camp			4.00	2.70					.00	.20	1.31	.00	
Kanab (Utah)	1.47	1.69	.56	.79	.42	.46	.92	.50	.54	.99	1.20	1.55	11.09
Lincoln, Camp	17.05	3.95	12.30	3.99	.27	.33		1.79	1.27	.58	1.08		
Lochiel	1.90					.17	.36	1.67	3.87				
Lordsburg (N. Mex.)	.47	.24	1.01	.06	.08	.14	1.99	1.99	.87	.72	.58	.60	8.77
Lowell, Fort	1.12	1.22	.83	.28	.06	.35	2.49	2.73	1.20	.06	.52	.88	11.74
Mineral Park							.14						
Maricopa	.44	.52	.70	.11	.09	.08	.42	.87	.36	.36	.30	.75	5.00
Mayer							4.14	2.59					
McDowell, Fort	1.07	1.24	.75	.38	.14	.13	1.27	1.48	1.00	.37	.82	1.79	10.44
Mesa City							.40						
Mojave, Fort	.87	.75	.62	.35	.14	.47	.27	.62	.09	.30	1.21	1.12	6.81
New River			2.85	.00	T	T	2.83	1.31					
Needles (Cal.)	1.68	.98	2.08	.10	.75	.00	.49	.03	.12	.83		1.32	8.38
Pantano	1.03	1.23	1.00	.16	.24	.63	1.82	2.81	1.50	.95	.42	1.09	12.88

Average rain-fall, by months and years, Arizona Territory—Continued.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Payson.....							2.40	.50					
Peoria.....	1.56	.24	1.00	.01	T								
Prescott Junction.....								1.38	3.05			1.31	
Phoenix.....	.53	.88	.87	.29	.12	.09	.70	1.02	.59	.27	.48	.89	6.73
Red Rock.....							2.54	1.99					
Reno, Camp.....	2.46	2.70	.88	.03	.00	.50			.02	1.00	3.50	.70	
Rioville (Nev.).....	1.14			.03	.06	.10	.36	.17	.16	.01	1.29	1.98	
San Carlos.....	1.12	1.62	1.42	.19	.24	.26	1.85	2.42	.77	.77	.71	1.79	13.16
San Simon.....	.18	.33	.65	.02	.11	.02	.61	1.41	.53	.30	.13	.40	4.69
Show Low.....							3.06	2.95					
Signal.....						.06	T	.98	.42				
Silver King.....							1.65	2.78					
Silver City (N. Mex.).....	1.42	1.08	.90	.22	.48	.69	3.96	5.95	2.24	1.19	1.40	.75	20.28
Simmons.....								.27					
Skull Valley.....	3.11	1.11	3.09	.30									
Stanton.....							1.26	3.73					
Strawberry.....					.00	.20	2.10	1.41					
St. George (Utah).....	1.43	.78	.65	.26	3.70	.03	.62	.66	.56	1.26	.50	1.12	11.57
St. John's.....							3.70		.85				
Teviston.....	1.20	.80	.80	.20	.00	.91	1.03	.08	.05	.16	1.14	1.08	7.45
Texas Hill.....	.61	.39	.37	.06	.04	.00	.11	.61	.43	.76	.30	.48	4.16
Tip Top.....							2.46	1.17	.26				
Thomas, Fort.....	.71	1.33	1.14	.26	.50	.50	1.96	2.31	.98	.67	.86	.42	11.64
Total Wreck.....								2.01					
Tombstone.....	3.27			.00	.00	.00	3.59	2.07	.50	.49		3.60	
Tres Alamos.....							2.84	2.02					
Tubac.....	.81	.29								.00	.33	2.57	
Tuba City.....								.00					
Tucson.....	.62	.92	.61	.21	.08	.19	2.55	2.26	1.09	.39	.51	1.13	10.56
Volunteer Springs.....				.00	.90	.72	2.30	.07					
Verde, Fort.....	.90	.91	1.16	.59	.26	.24	.92	2.84	1.03	.69	1.07	1.36	11.97
Wallen.....	2.43	1.59	.52	.25	.03	.03	5.32	4.90	.90	.00	.00	2.93	18.90
Walnut Grove.....							2.10	1.65					
Whipple.....	1.42	1.78	1.72	.95	.60	.16	2.96	2.81	1.12	.65	.91	1.19	16.24
Wickenburg.....	1.07	1.10	.80	.52	.30	.02	.81	1.99	.66	.18	.51	1.87	9.83
Wilcox.....	.66	1.07	.95	.01	.12	.18	2.19	3.13	1.40	.83	1.27	1.17	12.98
Winslow.....		.60	.60	.02	.00	.04	.54	.68	.38	.84	.36	5.60	
Williams.....	.70	1.70	.95	.05	.07	T	13.5	2.07		2.30	4.30	3.80	
Willow Grove.....	.48	.88	.42	.59	.20	.03	3.05	2.37	.07	.33	.23	.35	9.00
Willow Springs.....	2.04		5.77		.00	.20	2.74	2.42			1.76	3.08	
Woodruff.....								.28					
Yuma.....	.48	.42	.55	.08	.03	T	.13	.40	.15	.18	.37	.42	3.21

REPORT
OF
THE GOVERNOR OF DAKOTA.

EXECUTIVE OFFICE,
Bismarck, Dak., October 25, 1889.

SIR: In answer to your communication dated July 19, 1889, requesting me to forward to your Department a report on the condition and of the progress and development of the Territory of Dakota for the year ending June 30, 1889, I have the honor to submit the following report:

DAKOTA CLIMATE.

It is specially worthy of note that Dakota has been totally free from the ravages of disease usually prevalent in the settlement of a new country, and the past year has fully sustained her character in this respect.

The healthful, invigorating properties of the atmosphere, consequent upon its richness of ozone, its dryness, purity, and above all its favorable electrical conditions, perform cures in pulmonary, malarial, and general chronic debilities that are a constant and joyful surprise to the afflicted and a mystery to the medical profession.

It is believed that no error is so prevalent and universal throughout the country as the general misconception concerning the climate of Dakota.

The very low temperature and violent storms occasionally prevailing for a few hours during the winter are accepted abroad as the normal climatic condition throughout that season, while in truth there is not perhaps an area in the United States that can boast so many perfect, sunshiny, pleasant days during the winter season as Dakota.

The climate of Dakota is not to be judged, as we persist in doing, by corresponding latitudes east and west. No one can realize the matchless, invigorating, and enjoyable attributes of the Dakota winter, taken together as a whole, except by experience. Even the extreme low temperature which occasionally occurs, owing to the dry and rare atmosphere, is not accompanied with the effects naturally attributed to it from an eastern stand-point.

There is no rain in winter, no mud, or slush. Under foot the snow lies crisp and hard. The storms are not as frequent as in Ohio or New York, and blizzards like that of 1888 are of short duration and occur

only once in about twenty years. It is owing to the climate that cattle can rove at large and thrive in winter with little or no shelter. It is a scientific fact that the temperature and sunlight during the growing season have much to do with the quality of the wheat, corn, and other grain, whose superior properties are attested by the Government chemist and by the milling trade.

We cite the following tables to give the exact conditions as to the temperature, rain-fall, etc. Under the authority of General A. W. Greely, Chief Signal Officer, U. S. A., monthly reports are regularly forwarded to the office of commissioner of immigration from the following stations of the United States Signal Service :

Locality.	Latitude.	Longitude.
Missouri Valley :	<i>m. s.</i>	<i>m. s.</i>
Yankton.....	42 45	97 3
Huron.....	44 21	98 90
Fort Sully.....	44 30	101 44
Extreme northwest :		
Moorhead (Fargo).....	46 51	96 50
St. Vincent (Pembina).....	49 00	97 00
Bismarek.....	46 48	103 58
Fort Buford.....	48 30	100 38
Northern slope :		
Rapid City.....	44 4	103 12

In two of the following tables the records are also furnished from twenty other points in the Territory where meteorological observations were taken for the periods named in the tables.

The mean temperature shows an average climate for any given period. The following tables show the mean monthly and annual temperature in Dakota, and the mean annual temperature of each locality named, the average monthly and annual precipitation, and the mean annual precipitation at each point of observation :

Mean monthly and annual temperature in Dakota for the periods and localities named below.

Stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Mean annual temperature for each locality.	Period covered by reports (dates inclusive).
Fort Abercrombie	1.0	5.1	13.5	40.5	60.3	67.1	73.3	69.8	60.0	42.5	19.3	12.1	37.2	July, 1874, to October, 1877. Record of post surgeon. (Incomplete.)
Fort Abraham Lincoln	3.8	9.9	21.7	40.4	57.2	66.3	72.2	69.5	58.1	44.9	25.9	12.7	40.1	July, 1874, to date. Record of post surgeon.
Alexandria	3.9	7.6	25.8	42.9	51.6	65.6	79.6	69.4	58.8	45.0	32.1	15.4	40.0	April, 1882, to February, 1884. Record of voluntary observer.
Fort Bennett	9.3	15.1	29.2	43.8	56.5	67.6	71.4	70.6	60.1	46.1	30.9	18.3	43.6	October, 1880, to November, 1885. Record of Signal Service.
Bismarck	4.5	11.1	22.2	40.6	55.2	63.8	68.8	67.5	55.8	43.6	25.5	13.4	39.4	October, 1874, to date. Record of Signal Service.
Fort Buford	5.2	11.5	23.0	41.2	54.2	63.2	69.5	67.5	54.9	43.0	25.6	13.1	38.7	July, 1874, to date. Record of post surgeon prior to January, 1879. Signal Service since.
Deadwood	21.0	24.5	31.6	39.9	49.8	59.7	65.3	65.0	53.1	43.6	32.8	23.2	42.1	January, 1878, to date. Record of Signal Service.*
Fort Hale	12.1	16.3	28.6	45.6	59.4	69.8	73.8	73.6	61.2	48.6	29.5	14.8	44.7	January, 1879, to May, 1884. Record of post surgeon.
Huron	6.7	13.8	28.0	44.5	54.6	66.0	69.7	68.1	56.6	46.8	29.8	17.2	41.8	July, 1881, to date. Record of Signal Service.
Lower Brulé Agency	15.9	26.7	28.9	48.1	58.7	66.8	77.2	74.0	62.0	46.6	30.5	20.8	46.2	September, 1875, to December, 1878. Record of post surgeon.
Fort Meade	16.7	20.5	31.1	42.5	55.2	50.5	72.0	71.2	59.1	46.5	32.6	22.2	41.5	July, 1879, to date. Record of post surgeon.
Morrison	17.8	14.4	26.5	45.5	66.5	72.0	.....	80.0	69.0	54.0	35.5	23.2	.....	December, 1878, to April, 1882. Record of voluntary observer. (Incomplete.)
Olivet	17.4	21.8	31.7	46.1	59.8	68.6	73.2	72.9	61.1	48.3	30.0	18.2	44.9	June, 1877, to November, 1882. Record of voluntary observer.
Pembina	-5.1	1.3	13.6	35.4	52.7	62.1	67.3	64.2	52.2	38.9	19.1	4.5	34.3	March, 1873, to date. Record of post surgeon and Signal Service.
Fort Randall	14.7	21.2	31.3	48.0	60.9	69.4	75.0	73.6	63.3	50.5	32.9	21.1	46.8	July, 1874, to date. Record of post surgeon.
Fort Rice	8.5	13.8	24.3	44.1	58.2	66.5	76.0	72.0	61.2	44.6	25.0	20.8	41.9	July, 1874, to October, 1878. Record of post surgeon.
Richardton	0.4	9.5	23.7	40.3	51.4	66.3	69.8	65.3	55.8	46.7	29.0	11.5	39.0	March, 1884, to date. Record of voluntary observer.
Fort Seward	1.8	6.0	12.8	37.6	56.7	59.7	70.7	67.6	55.7	41.7	17.1	11.3	35.1	July, 1874, to August, 1877. Record of post surgeon.
Fort Sisseton	3.3	9.5	21.8	41.2	54.7	64.8	69.3	67.3	56.0	44.8	24.8	8.0	38.8	September, 1876, to date. Record of post surgeon.
Fort Stevenson	3.8	9.6	19.7	38.8	53.5	63.0	69.0	66.2	54.3	41.6	23.3	9.9	36.8	July, 1874, to May, 1883. Record of post surgeon to February, 1879. Signal Service to 1883.
Fort Sully	11.2	18.2	28.9	46.4	59.1	68.8	74.6	73.1	61.6	48.9	30.3	17.8	45.0	May, 1872, to date. Record of Signal Service and post surgeon.
Fort Totten	-1.7	5.2	16.5	37.8	54.1	63.1	68.5	66.6	55.5	42.0	21.4	7.8	36.4	July, 1874, to date. Record of post surgeon to January, 1884. Signal Service since.
Vermillion	4.5	24.1	29.0	49.7	63.2	.....	.....	.....	62.5	48.3	37.0	27.0	.....	April, 1884, to May, 1886. Record of voluntary observer. (Incomplete.)
Fort Wadsworth	-0.6	-1.4	14.2	37.4	57.1	61.0	71.4	67.4	58.4	44.1	19.3	17.3	35.1	July, 1874, to August, 1876. Record of post surgeon.

* Observations taken at Lead City from June to October, inclusive, 1878.

Mean monthly and annual temperature in Dakota for the periods and localities named below—Continued.

Stations.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Mean annual temperature for each locality.	Period covered by reports (dates inclusively).
Webster	1.3	9.0	25.1	42.6	57.3	70.5	74.8	72.3	63.1	50.1	31.1	12.6	42.0	June, 1882, to date. Record of voluntary observer.
Yankton	14.1	19.9	29.9	45.4	59.5	68.5	73.5	71.8	61.3	49.4	32.2	20.4	45.5	April, 1873, to date. Record of Signal Service.
Fort Yates	3.8	11.5	25.3	44.1	57.5	68.7	72.7	70.0	59.2	44.9	28.6	12.8	41.6	January, 1882, to date. Record of Signal Service and post surgeon.
Fargo (Moorhead)	-4.0	4.5	19.3	39.8	54.6	64.7	67.5	63.8	55.8	43.8	24.6	9.0	37.0	
Mean monthly and annual temperature for Territory	6.8	12.9	24.2	42.5	56.7	65.8	71.8	69.6	58.8	45.7	27.7	15.6	41.5	

NOTE.—The latest observations included in the above calculations are those of December, 1886.

Average monthly and annual precipitation (rain-fall and melted snow) in Dakota for the periods and localities named below.

Stations.	Period covered by reports (dates inclusive).											
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
Fort Abercrombie	0.50	0.09	0.63	1.70	1.80	1.73	1.79	2.18	1.85	0.37	0.60	0.52
Fort Abraham Lincoln	0.44	0.64	0.84	2.30	2.45	2.96	1.75	2.14	0.80	1.04	0.49	0.79
Alexandria	0.28	1.07	1.12	3.86	3.47	4.20	5.26	3.20	1.18	2.41	0.40	0.82
Fort Bennett	0.73	0.64	1.01	2.20	2.58	3.97	2.17	2.21	1.24	0.69	0.29	0.45
Bismarck	0.54	0.64	1.05	2.78	2.91	3.40	2.28	2.60	1.24	1.19	0.75	0.77
Fort Buford	0.55	0.45	0.50	1.28	2.32	2.79	1.75	1.62	0.72	0.96	0.49	0.65
Deadwood	1.04	1.26	1.99	5.02	4.70	3.69	2.33	2.12	1.38	1.84	1.35	1.50
Firesteel	0.55	0.28	5.18	2.12	3.87	2.92	4.38	2.92	3.10	1.00	0.78	0.32
Fort Hale	0.39	1.09	0.97	1.43	3.00	3.71	2.39	2.52	0.70	2.32	0.25	0.49
Huron	0.21	0.34	0.70	2.72	3.73	4.14	4.32	3.37	1.85	1.86	0.66	0.39
Lower Brulé Agency	0.20	0.18	0.82	1.86	1.81	1.80	3.27	2.91	2.01	0.44	0.34	0.79
Fort Meade	0.71	0.56	1.18	2.80	4.43	2.73	1.98	1.82	0.49	0.73	0.51	0.49
Morrison	0.58	1.28	1.36	2.77	4.26	4.69	4.51	3.44	2.17	1.97	0.52	1.04
Olivet	0.84	1.14	0.94	2.51	4.86	4.57	2.93	3.02	2.14	2.30	0.34	1.26
Pembina	0.46	0.76	1.00	1.59	2.91	3.78	2.53	2.34	1.52	1.67	1.42	0.99
Fort Randall	0.44	0.87	1.58	2.74	4.36	5.18	3.67	3.02	2.39	1.83	0.55	1.35
Fort Rice	0.24	1.23	1.04	3.60	4.15	2.64	1.51	1.10	1.39	1.24	0.90	0.73
Richardton	1.50	0.87	1.00	3.41	2.65	4.20	6.98	3.53	1.30	0.83	0.93	0.97
Fort Seward	0.05	0.11	0.89	1.15	3.23	3.37	1.87	1.78	1.57	0.65	0.08	0.10
Fort Sisseton	0.37	0.40	1.05	2.14	2.63	3.58	3.46	2.37	1.37	1.99	0.61	0.62
Fort Stevenson	0.37	0.44	1.09	1.34	2.33	4.13	1.70	2.91	1.40	0.96	0.49	0.43
Fort Sully	0.42	0.38	0.72	1.95	2.77	3.42	3.06	2.13	0.94	0.63	0.48	0.59
Vermillion	0.96	0.40	1.30	2.97	1.69	2.88	2.35	3.87	2.18	1.58	1.35	0.52
Fort Wadsworth	1.86	0.58	2.65	2.35	2.26	1.87	1.95	4.12	1.33	1.63	1.45	2.19
Webster	1.58	2.89	2.46	4.87	6.18	7.24	6.30	2.53	3.18	4.34	1.86	2.11
Yankton	0.56	0.82	1.29	3.39	4.45	4.81	3.74	3.05	2.93	1.66	0.67	0.72
Fort Yates	0.34	0.23	0.46	1.84	1.51	3.34	2.57	1.87	0.75	0.50	0.32	0.57

* Observations taken at Lead City from June to October, inclusive, 1878.

Number of clear, fair, and cloudy days separately at each of the U. S. Signal Stations, and the averages for the Territory, for each month of the year 1888, as shown by observations at the United States Signal Service Stations in the Territory.

Stations.	January.			February.			March.			April.			May.			June.			July.			August.			September.			October.			November.			December.		
	Clear.	Fair.	Cloudy.	Clear.	Fair.	Cloudy.	Clear.	Fair.	Cloudy.	Clear.	Fair.	Cloudy.	Clear.	Fair.	Cloudy.	Clear.	Fair.	Cloudy.	Clear.	Fair.	Cloudy.	Clear.	Fair.	Cloudy.	Clear.	Fair.	Cloudy.	Clear.	Fair.	Cloudy.	Clear.	Fair.	Cloudy.			
Yankton.....	13	12	6	8	6	15	9	12	10	11	13	6	3	11	17	6	19	5				15	6	10	16	7	7	14	10	7	14	9	7	16	5	10
Huron.....	10	17	4	10	13	6	8	15	8	12	13	5	4	16	11	8	14	8	7	16	7	15	5	11	15	13	2	13	10	8	21	3	6	7	7	
Fort Sully.....	15	10	6	7	16	6	9	16	6	12	15	3	6	17	8	7	11	7	3	12	14	8	9	22	7	1	13	14	4	19	3	8	19	6	6	
Moorhead, (Fargo).....	11	13	7	7	13	9	6	12	13	4	18	8	6	13	12	.....	.....	.....	7	11	13	16	4	11	17	2	11	10	1	18	4	8	17	3	11	
St. Vincent, (Pembina) ..	17	13	1	8	16	5	12	14	5	9	15	6	12	13	6	11	9	10	10	8	13	15	10	6	8	9	13	8	7	9	16	11	11	9	9	
Fort Totten. .	14	12	5	10	11	8	12	10	9	8	17	5	10	17	4	6	13	11	8	6	5	19	5	7	17	8	5	10	8	18	3	9	14	11	6	
Bismarck.....	13	13	5	9	12	8	7	19	6	7	21	2	10	15	6	9	10	11	6	14	9	11	11	9	14	14	2	14	4	13	5	19	2	10		
Fort Buford ..	8	19	4	4	12	13	5	19	7	4	17	9	4	15	12	2	15	3	9	16	13	9	9	10	14	6	7	13	10	13	8	15	8	5		
Deadwood	14	15	2	6	18	5	9	10	12	12	12	6	5	10	16	4	13	13	8	14	10	11	7	20	7	3	11	14	6	20	8	12	12	5		
Averages..	13	14	4	8	14	7	9	14	8	9	16	5	7	14	10	7	13	10	12	12	7	14	7	10	15	9	11	11	6	17	6	15	8	8		

Number of clear and fair days during year, 273.

It is thus shown that Dakota is pre-eminently the land of sunshine. Out of the three hundred and sixty-six days in 1888, the sun shone pretty constantly on two hundred and seventy-three days. The average number of clear and fair days for every month of the twelve was a fraction less than twenty-three. In January twenty-seven days of sunshine are highly-appreciated, leaving but four cloudy days, during which the precipitation consisted entirely of snow-fall.

AREA.

The area of Dakota Territory entire is 150,932 square miles. Division will give two States, each larger than the great State of Missouri. South Dakota will contain 76,620 square miles, and North Dakota 74,312 square miles. South Dakota will be the eighth State in size in the Union, standing between Kansas and Nebraska, and North Dakota tenth on the list of forty-two, as the list is made for 1889.

SOIL AND SURFACE.

The soil of all Dakota is of unquestioned fertility. It is about the same everywhere—a rich black loam, with just enough sand to cause it to be easily worked and to prevent it from getting muddy, and resting on a clay subsoil retentive of moisture. The soil is highly productive, and will make the most of a given amount of rain-fall.

The surface of Dakota is for the most part a vast undulating plain. The Plateau du Coteau du Missouri is a chain of hills traversing the Territory from northwest to southeast. A smaller range of coteaus forms a dividing ridge for a considerable distance between the Big Sioux and James River Valleys. The Black Hills, in the extreme southwestern corner, constitute the only mountainous region of any extent, the Turtle Mountains, in the extreme north, covering an area of only 800 square miles.

The entire surface of Dakota is well watered. The Missouri River extends diagonally across the great plain from extreme northwest to extreme southeast. It is navigable as far north and west as Fort Benton, Mont. The James or Dakota River rises in the central part of Dakota (North) and takes a meandering course southward, its actual length being 600 miles in a valley 300 miles long. It is the longest unnavigable river in the world. The Big Sioux River rises near Lake Kampeska, near Watertown, South Dakota, and flowing south empties into the Missouri on the eastern border of the Territory, about 50 miles below the mouth of the James. The Black Hills are inclosed between the two forks of the Cheyenne River, into which numerous clear streams, fed by springs and descending from the mountains, empty their unfailing supplies. The Red River of the North forms the boundary between North Dakota and Minnesota, and is navigable a distance of 250 miles, from Fargo to Winnipeg. The Cheyenne River, which takes its rise some distance west, over the headwaters of the James River, is the principal tributary of Red River, and a number of other streams also empty into the latter, traversing the Red River Valley at frequent intervals. The Mouse River is a Canadian stream which makes a deep bend southward in the form of a loop, passing through several counties of North Dakota. A number of small rivers and creeks empty into the Missouri and the James.

The Sioux Reservation is watered by the Cannon Ball, Grand Moreau, Cheyenne, Bad, and White Rivers. The west Missouri country

has the Knife and Heart Rivers. There are innumerable lakes in both North and South Dakota, many of which are very beautiful; the largest in North Dakota is Devil's Lake, and in South Dakota, Lake Kampeska. Their natural beauty and romantic Indian legends render them specially attractive as summer resorts.

POPULATION.

The growth of population in the Territory of Dakota has been singularly rapid and stable. The record for the past twenty-nine years is as follows:

Census of	
1860	5,000
1870	14,181
1880	135,177
1885	415,610

A careful estimate up to the 30th of June, 1889, gave the Territory a population of 650,000. This estimate is based upon the census of 1885 with estimates of the increase since that time made from the total land entries and corrected by comparison with the total vote of the Territory at the last elections.

This estimate was obtained by multiplying the total number of land entries both upon Government and railway lands, by three, and adding to the result the estimated natural increase; these figures, together with the population given by the census of 1885, made the total above mentioned, which is doubtless a conservative and reasonably accurate estimate.

The returns at the next succeeding election furnish a practical method of verification. As an illustration of this fact it may be stated that while the estimate of population for the year ending June 30, 1888, was placed at 640,823, the returns of the election of November last indicated that the estimate was excessive, and the best opinion placed the population at the opening of the present year at 600,000 souls. As above stated, the increase during the first six months approximates 50,000. Of this total population there were probably 379,000 people within the limits of the future State of South Dakota, and 271,000 in the State of North Dakota on the 30th of June, 1889.

The statehood elections held October 1, 1889, more than verify the above figures, there having been 79,059 votes cast in South Dakota and 38,146 votes cast in North Dakota.

The Federal census of 1885 showed an American-born population of 65 per cent., the proportion in North Dakota being 58 per cent., and in South Dakota 72 per cent. The native Dakota-born population of the whole Territory amounted to 58,501 at that time, or 14 per cent. of the total population, and this rate doubtless remains practically unchanged.

Of the foreign-born population the Scandinavians predominate, and next in order come Germans, Canadians, Irish, and Russians. Nearly all the civilized races are represented in Dakota; there are colonies of Jews from Poland, Mennonites from Russia, Turks from Roumalia, and hardy northmen from Iceland.

The population of foreign citizens in proportion to the entire population as given by the census of 1885 is about one in three, and this ratio doubtless remains unchanged.

One of the important incidents of immigration during the past season was the large influx of German Russians to the western central counties of the Territory. Hundreds have taken up Government land

in these localities, and promise to become a most desirable and prosperous class of citizens.

Number of filings, etc., at the ten United States land offices in Dakota, during each month, for the year ending June 30, 1889.

Months.	Pre-emption filings.	Homestead filings.	Timber-culture filings.	Pre-emption proofs, cash entries.	Commuted homesteads, cash entries.	Final homestead proofs.	Timber-culture proofs.	Newly filed on.	Acquired by final proof and cash entry.	Purchased by land scrip.
1888.								<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
July	441	328	457	231	41	667	12	208,774	146,717	160
August	297	172	300	179	49	387	12	118,442	86,128	320
September	208	142	230	143	51	386	14	88,584	92,412	160
October	231	307	352	281	92	559	10	136,693	137,651	320
November	459	420	426	378	80	525	16	202,593	153,331	520
December	297	328	271	262	77	480	6	135,362	130,327	640
1889.										
January	217	286	258	185	72	477	9	105,541	107,812	640
February	225	243	244	216	64	233	4	99,466	88,743	800
March	690	441	437	156	32	250	5	235,030	66,941	320
April	848	411	589	219	45	520	5	278,553	120,067	320
May	893	386	525	191	40	656	11	273,194	128,398	.....
June*	643	323	439	196	26	540	8	213,798	116,954	80
Total	5,449	3,787	4,528	2,637	669	5,680	112	2,096,030	1,375,481	4,280

* No report from Yankton.

Number of filings, etc., in each United States land district in Dakota for the year ending June 30, 1889.

Districts.	Pre-emption filings.	Homestead filings.	Timber-culture filings.	Pre-emption proofs, cash entries.	Commuted homesteads, cash entries.	Final homestead proofs.	Timber-culture proofs.	Newly filed on.	Acquired by final proof and cash entry.	Purchased by land scrip.
								<i>Acres.</i>	<i>Acres.</i>	<i>Acres.</i>
Yankton*	86	71	97	97	28	409	56	32,392	83,636	.....
Mitchell	180	192	390	134	57	932	48	116,306	167,219	80
Watertown	507	316	430	343	111	807	7	181,319	200,395	1120
Huron	357	348	680	195	82	951	.....	161,418	184,774	.....
Aberdeen	826	606	658	296	86	487	.....	332,039	136,920	480
Rapid City	752	371	396	333	32	98	.....	228,629	66,390	2,400
Fargo	330	420	478	170	50	948	1	190,752	175,154	.....
Grand Forks	647	464	392	299	140	486	.....	254,247	144,967	.....
Devil's Lake	1,298	578	670	570	69	80	.....	405,103	114,427	200
Bismarck	466	421	337	200	14	482	.....	193,825	101,599	.....
Total	5,449	3,787	4,528	2,637	669	5,680	112	2,096,030	1,375,481	4,280

* No report for June, 1889.

There were 13,764 new filings under the general land laws during the year ending June 30, 1889, distributed as follows:

The total area filed upon during the year was 2,096,030 acres as against 1,838,142 during the year preceding. There were in all 9,098 final proofs, of which 3,306 were cash entries, 5,680 final homestead proofs,

and 112 timber-culture proofs. The increased homestead proofs were due to the maturing of residence in the large number of claims taken up in 1882 and 1883.

Of the cash entries there were 2,637 pre-emption proofs and 669 commuted homesteads. The area acquired by final proofs and cash entry during the year was 1,375,481 acres, and that purchased by scrip was 4,280 acres.

The area of new settlements was nearly equal north and south of the seventh standard parallel, the line of division between the proposed States of North and South Dakota. The area entered at the six land offices in South Dakota, viz, Yankton, Mitchell, Watertown, Aberdeen, Huron, and Rapid City was 1,052,103 acres, while the area entered at the four land offices of North Dakota, viz, Fargo, Grand Forks, Devil's Lake, and Bismark was 1,043,927.

The area acquired by final proof in the southern half of the Territory during the period mentioned amounted to 839,334 acres, that similarly acquired in the northern half amounted to 536,147 acres. The large excess of final proofs in South Dakota is explained by the fact that most portions of this region have been settled longer than the northern districts. The bulk of the present vacant land area, 19,877,273 acres, lies in the Bismarck and Devil's Lake districts, North Dakota, and the Rapid City, South Dakota, the amount still open for settlement in the Bismarck district being 13,922,029 acres.

Up to June 1, the settlement of lands has shown a marked increase over the first quarter of the year. The area newly filed on in 1889 amounted to nearly 1,000,000 acres, or more than half the total area filed on during 1888. The area of unsurveyed land taken up or "squatted" upon is estimated as being equivalent to one-third of the area filed on in the Bismarck and Devil's Lake offices, or about 160,000 acres.

The area of land sold by the Northern Pacific Railway from its grant, and by private owners, is estimated to equal about 25 per cent. of the lands entered during the year, or about 525,000 acres. The total acreage of lands entered or purchased by settlers therefore approximates 2,600,000 acres, or 4,060 square miles, an area nearly four times as large as that of Rhode Island, twice as large as that of Delaware, and within a few hundred square miles of the area of Connecticut. The vacant public lands of the Territory still open to settlement approximated, on the 30th of June last, about 19,877,275 acres.

The requisite number of signatures having been obtained from the Sioux Indians by the commission appointed under the act of the last Congress, providing for the opening of a part of the great Sioux Indian Reservation, the available area of Government lands in Dakota will, upon the proclamation of the President, be increased by about 11,000,000 of acres, making the total area of vacant lands in the Territory over 30,000,000 of acres. Judging from the recent experience on the opening of the Oklahoma country a great tide of immigration will at once set Dakotaward upon the opening of the reservation, and the prediction is justified that the area settled during the next year will exceed that of any preceding year.

COMMERCE AND PROGRESS OF RAILWAY ENTERPRISES.

During the past year there has been practically no railway building. The year 1887 was one of unusual activity in railway circles, and some 700 miles of new road were constructed by the several systems in the Territory. This remarkable activity has been followed by a period

of inactivity, though several new lines have been projected and a considerable amount of grading done during the last year.

The total mileage of each system in the Territory on the 31st of December, 1888, is shown by the following table; the totals remain unchanged to date:

	Miles.
Black Hills and Fort Pierre Railway.....	15
Burlington, Cedar Rapids and Northern Railway.....	83
Chicago, Milwaukee and St. Paul Railway.....	1,215
Chicago and Northwestern Railway.....	758
Chicago, St. Paul, Minneapolis and Omaha Railway.....	87
Fremont, Elkhorn and Missouri Valley Railway.....	123
Minneapolis, St. Paul and Sault Ste. Marie Railway.....	99
St. Paul, Minneapolis and Manitoba Railway.....	1,191
Northern Pacific Railway.....	837
Minneapolis and St. Louis Railway.....	40
Illinois Central Railway.....	15
Total miles of railroad in 1888.....	4,463

The total mileage graded in 1887 and 1888 and not completed is shown by the following table:

	Miles.
Aberdeen, Bismarck and Northwestern Railway, from Aberdeen, Brown County, to Bismarck, Burleigh County (Minneapolis, St. Paul and Sault Ste. Marie).....	160
Forest City and Watertown Railway, from Forest City to Hoven, Potter County.....	30
Deadwood and Central City Railway, from Deadwood to Lead City.....	5
Total miles of road graded but not ironed.....	195

A number of important railway projects which may be counted among the certainties of the near future are but awaiting a favorable condition of the Eastern money market for their inauguration. Dakota demands and can profitably support a large number of railways, and the various companies appreciating this fact have hastened to extend their lines into the territory unoccupied by other roads.

The opening of the great Sioux Indian Reservation will doubtless stimulate railway building to a marked degree during the coming year. The Chicago and Northwestern Railway has two lines now at the eastern border of the reservation, one with its terminal at Pierre, and the other at Gettysburgh. The Chicago and Milwaukee system also have a through line with its terminal at Chamberlain, on the Missouri River. It is more than probable that one or more of these lines will be extended through the reservation to the Black Hills during the coming year.

Commercially Dakota is making rapid progress. In nearly all her towns of importance jobbing houses are located, and they are doing a large and successful business. The Territory has a number of cities which are becoming important distributing centers, and the commercial interests are keeping full pace with the development of other industries.

AGRICULTURAL DEVELOPMENT.

Dakota is pre-eminently an agricultural region. Almost its entire area is susceptible of cultivation, and those portions not adapted to the plow are available for grazing. In no other country of the world are there larger areas of fertile land, level as a floor, easily worked, and as fruitful as the valley of the Nile.

As in all new agricultural regions the production of wheat has been the leading industry. With fertile lands upon which wheat can be raised at a cost of from 24 to 36 cents per bushel, varying with the extent of the farming, the results of agriculture in favorable years have been almost certain.

In 1860, when the development of the Territory began, less than 1,000 bushels of wheat were raised. In 1870 the crop aggregated 170,662 bushels; in 1880, 2,830,289; in 1885, 38,166,413 bushels, while in 1887 the wheat crop reached, according to estimate of the National Department of Agriculture, 52,406,000 bushels, and according to the estimate of the Territorial statistician, 62,553,499 bushels.

The yield of corn in 1885 was 7,800,593 bushels; two years later, in 1887, the yield had increased more than 300 per cent., and, as reported to the Territorial statistician, amounted to 24,511,726 bushels, a crop larger than that of Minnesota, Michigan, or any one of more than a dozen States. The wheat crop of 1888, according to the estimate of the commissioner of immigration, was 37,763,847 bushels against 38,036,000 as estimated by the statistician of the Department of Agriculture, Washington. The corn crop, according to the authorities above mentioned, was 19,068,680 and 18,816,000, respectively.

The following table shows the acreage and estimated yield of the various crops for 1889 for the Territory at large, and for North Dakota and South Dakota separately:

Counties.	Wheat.		Oats.		Corn.		Barley.	
	<i>Acres.</i>	<i>Bushels.</i>	<i>Acres.</i>	<i>Bushels.</i>	<i>Acres.</i>	<i>Bushels.</i>	<i>Acres.</i>	<i>Bushels.</i>
NORTH DAKOTA.								
Barnes.....	120,452	915,435	25,922	399,198	229	3,549	11,672	147,066
Benson.....	28,927	216,952	4,678	111,103	1,514	52,990	1,285	21,416
Billings.....			70	2,100	20	700		
Bottineau.....	34,066	272,528	5,936	109,222			308	4,434
Burleigh.....	83,991	739,120	7,681	184,344	8,099	380,653	434	5,534
Cass.....	376,032	3,008,256	59,130	1,350,135	1,112	50,040	13,082	261,640
Cavalier.....	61,697	848,333	12,440	311,000			5,175	129,375
Dickey.....	91,002	693,890	17,513	284,586	2,185	49,163	7,866	91,442
Eddy.....	28,367	217,480	5,492	146,452	12	420	1,392	24,592
Emmons.....	8,356	122,554	2,930	83,993	2,417	52,368	1,036	24,864
Foster.....	29,705	274,771	5,456	105,028	1	45	1,229	13,211
Grand Forks.....	251,420	4,117,002	39,792	1,362,876	134	5,527	18,387	766,125
Griggs.....	40,287	372,655	8,150	179,300	4	180	3,584	89,600
Kidder.....	29,499	127,829	4,873	40,608	128	640	988	10,209
La Moure.....	51,249	256,245	10,678	208,221	426	6,390	2,702	43,232
Logan.....	2,340	32,760	711	21,330	142	2,840	156	4,056
McHenry.....	4,688	35,941	2,573	72,901	83	2,698	541	8,476
McIntosh.....	19,236	250,068	5,502	171,937	680	14,960	1,597	21,958
McLean.....	5,062	43,533	2,299	50,578	585	21,060	214	4,337
Mercer.....	1,150	10,062	603	11,055	702	9,360	139	926
Morton.....	10,314	76,324	3,733	55,254	3,162	104,346	240	1,800
Nelson.....	66,135	286,585	11,269	157,766	7	175	2,889	41,409
Oliver*.....	969	4,845	995	4,975	1,200	33,000	25	188
Pembina.....	223,046	2,631,943	31,181	586,202	21	840	17,436	362,668
Pierce.....	8,760	85,410	2,050	40,487			300	6,000
Ramsey.....	106,762	516,017	13,215	167,390			3,528	31,752
Ransom.....	116,176	774,507	18,002	162,018	944		1,928	12,854
Richland.....	127,831	2,460,746	25,814	645,350	2,125	70,833	2,946	92,062
Rolette.....	8,359	93,143	4,105	95,002	8	200	663	11,556
Sargent.....	77,235	762,696	14,384	282,286	1,219	29,459	2,867	45,511
Stark*.....	7,806	89,769	4,100	71,750	2,100	84,000	325	6,500
Steele.....	86,410	777,690	14,748	265,464	81	2,430	2,315	37,503
Stutsman.....	48,880	374,747	10,290	205,800	68	1,700	3,667	79,452
Towner*.....	42,745	299,215	5,374	56,427			654	6,213
Traill.....	205,892	1,990,289	29,208	559,820	327	11,445	6,434	110,664
Walsh.....	222,840	2,896,920	33,268	1,097,844	10	500	9,902	233,687
Ward.....	3,875	23,250	1,708	15,941	277	7,664	116	928
Wells.....	24,430	122,150	4,690	70,350			609	7,612
North Dakota..	2,655,991	26,721,660	450,563	9,746,093	30,022	1,000,175	128,631	2,760,902
SOUTH DAKOTA.								
Anrora.....	27,520	174,293	9,068	108,816	21,207	452,416	1,174	14,088
Beadle.....	76,956	740,701	15,656	260,281	37,947	777,913	3,670	51,991
Bon Homme.....	16,372	122,790	17,505	218,812	36,148	991,070	1,716	23,166
Brookings.....	59,889	407,234	22,460	211,124	7,510	193,382	1,438	17,256
Brown.....	256,380	1,384,452	48,797	595,323	7,095	180,922	20,619	222,686
Brule.....	37,124	259,868	14,616	149,814	29,641	634,317	3,057	41,439
Buffalo.....	5,884	45,110	2,597	30,297	3,264	62,224	399	4,256

*Acreage estimated.

Counties.	Wheat.		Oats.		Corn.		Barley.	
	<i>Acres.</i>	<i>Bushels.</i>	<i>Acres.</i>	<i>Bushels.</i>	<i>Acres.</i>	<i>Bushels.</i>	<i>Acres.</i>	<i>Bushels.</i>
SOUTH DAKOTA—continued.								
Butte.....	1,837	23,145	1,122	34,782	2,510	62,750	136	2,958
Campbell.....	19,247	205,300	4,421	112,735	2,523	84,100	1,195	21,910
Charles Mix.....	19,011	217,269	8,606	78,683	24,916	780,701	542	3,929
Clark.....	66,829	354,921	16,099	370,277	8,059	241,770	3,682	67,503
Clay.....	7,091	101,046	12,481	390,031	35,918	2,027,387	466	6,990
Codington.....	67,249	829,404	15,613	507,422	2,141	83,856	3,345	89,200
Custer.....	2,119	51,704	2,664	101,232	5,319	172,335	74	2,497
Davison.....	23,198	189,450	11,246	168,690	22,409	373,480	1,230	18,143
Day.....	96,168	1,500,219	18,542	730,554	3,073	96,030	3,930	116,328
Deuel.....	34,066	366,209	11,309	262,934	3,070	126,637	1,310	31,112
Douglas.....	19,745	167,832	11,410	114,100	22,063	661,890	2,921	37,973
Edmunds.....	54,305	289,627	11,073	140,256	3,730	73,000	5,492	46,376
Fall River.....	1,126	18,016	900	24,900	6,552	181,270	21	735
Faulk.....	54,730	250,192	9,706	80,424	13,559	92,202	3,553	23,687
Grant.....	42,710	651,327	13,540	473,900	7,067	196,110	575	16,292
Hamlin.....	45,034	360,272	13,759	292,378	3,781	189,050	2,177	40,818
Hand.....	60,525	462,189	10,570	109,223	34,030	640,380	1,549	15,180
Hanson.....	32,809	180,449	13,588	118,895	21,175	449,969	2,868	24,438
Hughes.....	4,348	38,404	1,216	21,280	8,281	171,141	276	4,305
Hutchinson.....	58,452	514,372	29,895	375,635	44,451	1,449,102	3,461	33,918
Hyde.....	11,510	106,467	2,836	49,630	6,989	131,044	608	15,200
Jerauld.....	21,543	168,751	8,599	44,428	14,211	184,743	1,902	14,899
Kingsbury.....	90,436	777,749	26,274	325,797	13,791	267,545	3,324	43,212
Lake.....	46,053	564,150	19,081	395,930	8,286	244,437	3,000	78,750
Lawrence.....	11,024	205,780	8,312	246,588	5,122	166,465	174	3,828
Lincoln.....	21,847	323,334	30,876	827,480	44,434	1,884,002	2,860	51,480
McCook.....	42,147	252,882	18,298	192,129	26,307	328,837	2,341	16,972
McPherson.....	30,674	177,910	7,042	77,462	1,059	35,300	3,624	32,616
Marshall.....	86,510	504,640	15,642	80,817	1,198	17,970	7,888	56,530
Meade.....	6,500	104,000	6,135	204,500	7,228	185,519	179	3,132
Miner*.....	43,663	87,326	15,720	15,720	15,000	23,572	3,368	12,028
Minnehaha.....	37,593	460,514	33,228	743,476	31,176	1,024,350	6,189	106,981
Moody.....	36,245	260,964	23,082	166,190	10,478	220,038	3,869	59,583
Pennington.....	2,194	59,338	2,697	126,759	3,104	93,896	96	4,800
Potter.....	24,500	235,810	5,100	86,062	6,600	132,000	.....	.....
Roberts.....	17,154	314,490	4,150	152,161	2,177	61,681	409	13,633
Sanborn.....	39,596	382,760	16,564	256,742	13,060	300,380	1,928	26,510
Spink.....	176,637	1,091,938	20,381	201,546	35,108	365,122	10,315	103,150
Sully.....	19,149	185,107	2,949	44,235	12,882	201,818	971	11,166
Turner.....	18,789	281,835	21,185	439,588	33,651	1,346,040	1,053	14,391
Union.....	11,323	241,557	16,576	469,653	42,423	1,909,035	677	20,310
Walworth.....	12,091	126,955	2,786	83,580	1,474	36,850	740	9,620
Yankton.....	15,824	167,280	15,857	310,344	31,458	1,235,850	947	16,910
South Dakota..	2,013,726	17,287,332	671,829	11,623,615	784,655	21,821,898	127,338	1,694,875
The Territory..	4,669,717	44,008,992	1,122,392	21,369,708	814,677	22,832,073	255,969	4,455,777

Counties.	Rye.		Buckwheat.		Potatoes.		Flax.	
	<i>Acres.</i>	<i>Bushels.</i>	<i>Acres.</i>	<i>Bushels.</i>	<i>Acres.</i>	<i>Bushels.</i>	<i>Acres.</i>	<i>Bushels.</i>
NORTH DAKOTA.								
Barnes.....	262	4,585	22	220	836	38,456	877	6,358
Benson.....	2	37	.....	.....	105	9,844	662	7,282
Billings.....	.....	.....	.....	.....	12	1,800	.....	.....
Bottineau.....	11	198	.....	.....	258	37,087	22	176
Burleigh.....	389	5,446	8	120	741	80,028	689	7,062
Cass.....	18	360	.....	.....	1,549	119,531	512	3,925
Cavalier.....	24	480	.....	.....	358	56,683	981	10,791
Dickey.....	123	1,845	9	90	1,020	46,410	15,493	82,276
Eddy.....	.....	.....	8	80	149	17,383	559	7,546
Emmons.....	13	182	.....	.....	246	22,960	950	8,550
Foster.....	6	90	.....	.....	195	9,506	1,263	15,998
Grand Forks.....	125	2,500	.....	.....	838	12,894	372	7,440
Griggs.....	232	2,088	1	15	203	39,332	341	2,614
Kidder.....	91	2,730	4	60	126	3,990	156	1,248
La Moure.....	716	9,308	4	28	570	17,100	3,589	22,431
Logan.....	.....	.....	.....	.....	41	5,330	508	5,080
McHenry.....	18	270	3	45	133	12,857	90	900
McIntosh.....	31	180	.....	.....	288	37,080	12,359	135,948
McLean.....	19	380	.....	.....	114	9,006	6	60
Mercer.....	.....	.....	.....	.....	41	1,640	571	4,996
Morton.....	13	130	3	18	600	58,800	601	9,216
Nelson.....	71	1,136	11	110	256	29,867	304	3,496
Oliver*.....	.....	.....	.....	.....	125	7,188	150	750
Pembina.....	232	3,480	10	100	626	66,512	61	488
Pierce.....	.....	.....	.....	.....	75	10,000	100	800

*Acreage estimated.

Counties.	Rye.		Buckwheat.		Potatoes.		Flax.	
	<i>Acres.</i>	<i>Bushels.</i>	<i>Acres.</i>	<i>Bushels.</i>	<i>Acres.</i>	<i>Bushels.</i>	<i>Acres.</i>	<i>Bushels.</i>
NORTH DAKOTA—continued.								
Ramsey.....	5	75	.....	.....	302	27,935	76	494
Ransom.....	204	2,448	16	240	563	17,828	58	580
Richland.....	54	990	23	345	705	94,587	1,225	16,078
Rolette.....	18	270	14	466	218	27,095	63	735
Sargent.....	160	2,240	15	150	690	38,812	3,815	28,612
Stark*.....	100	1,000	.....	.....	475	45,125	150	2,250
Steele.....	146	1,460	1	15	387	42,957	424	2,968
Stutsman.....	41	820	52	780	583	79,676	429	4,576
Towner*.....	.....	.....	.....	.....	621	49,680	70	665
Traill.....	43	753	1	15	716	97,853	1	10
Walsh.....	.....	.....	.....	.....	1,055	98,748	5,512	56,957
Ward.....	.....	.....	.....	.....	171	19,950	10	150
Wells.....	.....	.....	.....	.....	128	9,600	4,462	35,696
North Dakota..	3,167	45,481	205	2,897	16,119	1,401,130	57,511	495,202
SOUTH DAKOTA.								
Aurora.....	938	12,506	27	71	493	28,758	2,600	18,200
Beadle.....	315	2,205	169	507	1,131	36,757	6,631	4,393
Bon Homme.....	319	3,190	128	1,024	607	45,525	8,186	65,488
Brookings.....	211	3,692	176	1,350	709	31,196	25,012	215,103
Brown.....	101	1,475	4	12	1,846	126,635	20,855	137,643
Brule.....	729	1,010	21	84	852	53,250	2,684	21,770
Buffalo.....	40	8,201	3	24	161	5,635	3,160	16,853
Butte.....	8	360	3	15	149	19,556	5	50
Campbell.....	47	186	.....	.....	176	18,040	8,873	91,688
Charles Mix.....	1,161	455	201	2,814	471	44,274	4,469	45,328
Clark.....	59	13,158	182	1,456	808	70,700	9,645	81,018
Clay.....	47	658	38	570	646	106,590	3,255	34,720
Codington.....	11	275	36	.....	719	54,520	2,599	28,156
Custer.....	8	213	34	935	419	65,783	9	90
Davison.....	501	5,511	29	393	468	45,630	2,091	14,282
Day.....	23	230	8	80	822	139,740	6,913	70,516
Deuel.....	41	717	17	170	480	33,000	7,553	76,530
Douglas.....	812	12,789	79	711	488	39,040	7,170	55,568
Edmunds.....	39	214	15	75	602	46,153	10,437	66,101
Fall River.....	14	350	4	80	291	36,666	2	18
Faulk.....	46	460	15	75	645	18,889	9,762	52,064
Grant.....	37	555	22	330	650	54,322	448	5,760
Hamlin.....	120	2,400	9	162	574	33,005	2,646	21,829
Hand.....	811	7,705	35	508	738	41,931	15,265	86,041
Hanson.....	493	6,162	57	855	436	40,330	2,288	12,964
Hughes.....	83	1,203	10	200	276	32,430	596	5,562
Hutchinson.....	944	8,118	126	1,197	992	54,560	6,037	47,089
Hyde.....	81	1,417	4	32	374	34,128	4,403	36,325
Jerauld.....	282	1,786	24	168	322	13,470	5,818	36,071
Kingsbury.....	307	2,149	24	384	1,002	98,196	12,200	100,040
Lake.....	204	3,400	55	440	566	66,033	11,770	120,642
Lawrence.....	72	1,872	3	30	882	192,717	18	180
Lincoln.....	178	2,047	48	792	829	92,848	14,382	178,336
McCook.....	224	1,008	91	773	615	24,087	5,585	40,025
McPherson.....	82	656	39	195	479	23,950	9,042	48,826
Marshall.....	7	56	.....	.....	398	17,910	6,361	57,249
Meade.....	29	1,450	6	120	359	45,473	.....	.....
Miner*.....	525	1,400	65	115	235	5,707	7,035	33,768
Minnehaha.....	468	10,292	87	2,175	978	87,408	17,918	185,899
Moody.....	138	552	58	290	620	33,480	24,538	176,683
Pennington.....	8	120	18	360	359	44,875	2	20
Potter.....	.....	.....	.....	.....	.....	.....	9,560	88,430
Roberts.....	7	105	32	640	177	16,225	489	5,868
Sanborn.....	4,492	112,300	18	144	382	21,646	9,334	76,228
Spink.....	417	5,004	365	3,168	1,190	52,360	17,474	91,252
Sully.....	621	7,762	216	1,728	643	39,651	2,248	12,739
Turner.....	158	2,133	42	420	721	108,150	8,377	90,053
Union.....	103	2,884	103	1,545	841	154,183	1,705	17,903
Walworth.....	33	330	.....	.....	159	21,862	4,754	47,540
Yankton.....	193	2,895	82	2,460	757	119,858	3,599	35,475
South Dakota..	16,587	255,620	2,828	29,667	29,537	2,637,132	345,803	2,754,376
The Territory..	19,754	301,101	3,033	32,564	45,656	4,038,262	403,314	3,249,578

* Acreage estimated.

The farm acreage in 1885 was, according to the census of that year, 16,842,412 acres, of which 6,560,758 acres were under cultivation. The cultivated area in 1887 was about 9,000,000 acres, and is over 10,000,000 of acres this year.

In addition to wheat and corn, large crops of barley, oats, flax, and potatoes are raised. In 1888 the total crop of oats was 30,963,247 bushels, of barley 3,811,882 bushels, and of flax 2,963,247 bushels, as estimated by the commissioner of immigration.

In the older sections of Dakota mixed farming is yearly becoming more general. Stock raising, for which Dakota possesses peculiar adaptation, is a rapidly growing industry. The number of stock and farm animals has increased remarkably since 1880. In that year there were 41,670 horses, 2,703 mules, 40,572 milch cows, 100,243 head of cattle, 30,244 sheep, and 63,394 hogs, of a total value of \$6,463,274, in the Territory. In 1889, according to the figures in the national Department of Agriculture, there were in Dakota 264,781 horses, valued at \$20,659,590; 16,850 mules, valued at \$1,596,324; 239,057 milch cows, valued at \$6,693,596; 813,878 oxen and other cattle, valued at \$16,619,318; 242,117 sheep, valued at \$609,747; 453,875 hogs, valued at \$3,248,386, the total value being \$49,426,961.

The increase in the value of live stock during the past nine years is 663 per cent. Dairying is becoming an important industry, and during the past two years a large number of creameries have been established and have generally proven profitable investments.

During the past few months the subject of irrigation has attracted a great amount of attention. At the last session of the Territorial legislature an act was passed authorizing the sinking of artesian wells upon the petition of a certain number of residents of a township. Numerous petitions under the act have been filed, and the work of sinking wells is now in progress in a number of counties. Mass meetings have been held in many towns for the purpose of discussing the question of irrigation, and the interest of the people has approached enthusiasm. The visit of the Senatorial Committee on Irrigation, in August last, still further aroused popular interest, and the expressions of members of the committee left little doubt as to their opinion of the feasibility of a general system of irrigation.

The success in sinking artesian wells in Dakota has been so general, and the flow obtained so strong and unvarying, that it seems certain that beneath the prairies of the region lies an unfailing source of water supply. The whole number of wells in the Territory at the present time is about one hundred and thirty-five. The flow is struck at depths varying from 500 to 3,000 feet, the average depth being about 1,000 feet. The average pressure is about 56 pounds to the square inch, some wells reaching a pressure of 175 pounds. The discharge per minute ranges from 1,800 to 3,000 gallons.

That an appropriation sufficient to survey the artesian field, ascertain its limits, and conduct experiments in irrigation would be of great practical benefit, can not be denied. The only element of uncertainty in Dakota agriculture arises from the irregularity in the rain-fall in some seasons, although the total precipitation compares favorably with other States and Territories of the Union. That the value of land and agricultural products would be increased fourfold is apparent, and it is to be hoped that speedy steps will be taken to realize possibilities, nowhere greater than in the new States of North and South Dakota.

LABOR SUPPLY.

There is a large demand in Dakota for both skilled and unskilled labor. The chief demand for common laborers comes from the farming communities, though at times a considerable demand for labor exists in the towns. During the wheat harvest and thrashing seasons the demand is quite large. In towns and cities of the Territory there is a large demand for skilled mechanics, especially masons and carpenters, who are employed in building. The establishment of manufactories of various kinds, the development of mines and quarries is constantly increasing the demand.

In ordinary employments the scale of wages is about as shown in the following table :

		Wages.
Farm laborers, regular season hands	per month..	\$15. 00 to \$25. 00
Day laborers	per day..	1. 50 to 1. 75
Carpenters	do....	2. 00 to 3. 00
Stone-masons	do....	3. 00 to 4. 50
Bricklayers	do....	3. 00 to 4. 00
Painters	do....	2. 00 to 2. 50
Blacksmiths	do....	1. 75 to 3. 00
Tinners	do....	2. 00 to 2. 50
Harness-makers	do....	1. 75 to 2. 50
Servant girls	per week..	2. 00 to 4. 00
Printers	do....	11. 00 to 20. 00

The industrious laborer is assured of continuous labor, and by frugality may hope to amass a competence.

BONANZA FARMING.

There are located in North Dakota a number of large, or what are known as "bonanza wheat farms."

Prominent among these are the Dalrymple farm, containing from 8,000 to 10,000 acres; the Grandin farm, of from 15,000 to 17,000 acres; the farm of the Dwight Farm and Land Company, containing 12,000 acres in cultivation; the Elk Valley farm of 5,000 acres, all located in the Red River Valley. In addition to these are a large number of farms ranging from 1,000 to 5,000 acres.

The character of the soil, its ease of cultivation, and great fertility, together with the level character of its surface and the favorableness of the climate during the harvest and thrashing season, make these extensive farming operations practicable.

These farms are operated with the most thorough system, and by the aid of the latest and most improved farm machinery.

The largest of these farms are divided into what are known as "divisions;" each division containing from 2,000 to 3,000 acres, which is in charge of a division foreman or superintendent.

Each division is supplied with boarding-house for men, stables, machinery, buildings, granaries, blacksmith shops, etc.

The field hands are organized into crews of from fifteen to twenty men each, which are placed under the charge of a competent field foreman, whose duty it is to see that the work is done well and faithfully. The supplies of all kinds are purchased in large quantities and largely at wholesale, and are issued to the several divisions upon requisition from the several cooks, and countersigned by the division foreman.

The general direction of the farm is intrusted to a general manager or superintendent, to whom all the various divisions must report, and who is held responsible for general results.

By this system and organization, and the thoroughness and efficiency obtained by the care and supervision of the work in all its details, the production of a bushel of wheat is reduced to its lowest possible cost; in favorable years the cost of the production of a bushel of wheat being as low as 30 or 35 cents. It requires, to operate a farm of 10,000 acres successfully, 300 horses, 60 gang-plows, 60 seeders or drills, 150 wagons, from 50 to 60 self-binding harvesters, 10 steam-thrashing outfits, and during harvest and thrashing, 250 men.

Many of these farms have, during the last four years, also given their attention to the breeding of horses and cattle. Great care has been exercised in the selection of the best strains of imported breeds, and the results thus far have been most satisfactory. This has done much to stimulate diversified farming among the smaller farmers, and enable them to obtain the use of well-bred sires, which is to result in the production in a few years of a large number of highly-bred horses and cattle, which is to be an important source of wealth, and give greater prosperity and stability to the agricultural growth of the country.

It may be mentioned that Hon. John Miller, manager of the Dwight Farm, is the governor-elect of the new State of North Dakota, and the State is fortunate in bringing to her aid his excellent executive ability in this crisis. He raised 8,500 acres of crops during the present season.

WOOL GROWING.

The wool-growing industry is beginning to develop, and will be one of the sources of wealth. This is the natural home of the sheep. No climate is more healthful for this animal, which is here remarkably free from diseases to which it is subject, and the wool of the finest imported sheep improves rather than loses in texture.

A large mill has been recently put in operation at Sioux Falls, which is now running entirely on Dakota wool.

It may be mentioned that the State officers for the State of South Dakota were each attired in an elegant suit, the fabric of these mills, upon the occasion of their public inauguration on the 15th instant.

VEGETABLES AND FRUITS.

Dakota produces the finest vegetables of every description. Her potatoes have acquired a national reputation second only to her wheat and take the first prizes wherever offered throughout the States. They are raised almost without effort, a fine crop being obtained from seed turned under the sod in May or June on wild breaking of the prairie.

All the bulbous roots yield luxuriantly and abundantly, such as beets, carrots, turnips, onions, radishes, etc. The manufacture of sugar from beets and of starch from potatoes will be among the important enterprises of the near future for the new States.

Fruits come last always among the farm and garden products of a new country. It is remarkable, however, what Dakota has accomplished thus far in this direction. In the older section of the Territory large quantities of small fruits are shipped to other parts of Dakota and to points in Nebraska and elsewhere. Apples and grapes are among the fruits exported, which consists mostly of strawberries, raspberries, etc. Plums and pears are cultivated successfully, and no larger or finer eating apples can be produced anywhere than in this older Dakota.

Fruit raising will be extended throughout the two Dakotas with the solid growth of the country, and new-comers should have no fear of being unable to have their own orchards and strawberry patches.

The wild fruits native to Dakota make a good showing. Prof. G. E. Bailey has gathered some interesting information about the fruits found growing wild in the Black Hills, from which the following is taken :

Plums are found in the drains and canyons, which have a delicious flavor and appear in three distinct species. They make an excellent stock for grafting purposes. Red raspberries, gooseberries, strawberries, choke cherries, June berries, frost grapes, and buffalo berries are all common, being found either in the timber, on the side-hills, or near the peaks, in the foot-hills, or along the streams. These wild fruits are all finely flavored and very agreeable to the taste. Some of the berries make very fine jelly.

CROPS OF 1889.

The climatic season of the summer of 1889 has been remarkable. While the general average of production will fall but little short of the previous year, it is still a fact that there are quite extensive localities where there has been a total failure of crops for want of rain-fall in the months of May and June. It is true particularly of portions of Minor, Sanborn, Beadle, Kingsbury, Spink, Faulk, and Brown Counties, in the south, and Ramsey, Benson, Nelson, Cavalier, Turner, Rolette, and Barnes Counties in the north. The abundance which prevails in other sections, notably the southeastern and Red River counties, will enable the people of the unfortunate districts to obtain such aid as they may need to overcome this temporary adversity.

PROGRESS OF MINING IN THE BLACK HILLS.

Mining in the Black Hills is confined almost exclusively to the three counties, Lawrence, Pennington, and Custer. With the exception of the stone quarries which are found in Fall River County and the coal of Butte, the great mineral bodies of the Hills lie within the three counties just named. Of these Lawrence County ranks first in importance. The first gold mines of any importance were discovered here and those which furnish the output of bullion from Dakota are nearly all located within the boundaries of Lawrence County. The entire area embraced within the mineral-bearing district of the Black Hills is not more than 4,000 square miles. This statement seems incredible when we think of the great area covered by the mining operations of Montana, Colorado, or even Idaho.

During the past year considerable progress has been made in our mining interests. This branch of industry has fully kept pace with the others and at no former time was the outlook for a rapid development of the mineral resources of the Hills brighter than it is at present. Much good may be looked for from the great attention which has been given to Dakota during the past year. The discussion growing out of the demand for statehood, and the renewed effort to secure the opening of a portion of the great Sioux Indian Reservation to settlement, have served to call attention to this portion of the Territory. The amount of information thus diffused among the people in regard to the Black Hills has been greatly increased and interest has been vastly stimulated. Not only are many looking thither with a view to locating and making homes there, but men of capital also who desire to increase their wealth are seeking it with a view to investing their money.

TIN.

Our tin interests are attracting much attention also. For some time past doubt has existed in the minds of many whether this metal could be found in a quantity sufficient to pay the expense of mining it. This

problem is happily being solved with great rapidity. Within the past year a company of foreign capitalists has been organized with heavy capital behind them to take hold of and develop what are known as the Harney Peak properties, located in Pennington and Custer Counties. A large number of claims have been purchased and others bonded. The work done thus far appears to be very satisfactory not only to the company itself but also as to showing the extent and value of the tin deposits of the Black Hills. I quote from a letter of a prominent gentleman of New York City to the New York Sun. This gentleman visited the Black Hills and made an examination of the tin district. He says:

Most of the claims of these districts have been located within the last twenty months. The assays in each case have been made by Professor Bailey, of the School of Mines, from 10-pound samples of three grades of ore. He says that he is convinced that these groups contain the largest and most valuable aggregation of tin veins ever brought to the attention of the world. He estimates that the main lodes of the Martha Washington, Evergreen, California, and Samelias groups, if cut to a depth of 300 feet and a length of 500 feet, would yield 6,085 tons of metallic tin. These are only five of the 700 lodes near Harney's Peak. Such cuts would be only a fair development of each lode, and the aggregate would be 29,418 tons of tin, worth, at 20 cents a pound, \$400 a net ton, or \$11,767,200 in all. Deduct even 75 per cent. from Professor Bailey's figures, and there is not a shadow of a doubt that the Harney Peak region can be made to supply the whole world with tin. The total production of the world in 1888 was less than 60,000 tons. The United States in the same year paid over \$30,000,000 for tin from abroad.

It is said that the average of the tin ores in the Black Hills is about double the average of the Cornwall mines. This may be so, but it is certain that the ore is far more easily treated. Most of the Cornwall ores, I am told, are roasted. There will be no roasting in the Black Hills. Professor Vincent says that the ores here are of almost typical purity. The eighty-three assays, and seven analyses, which he personally conducted, averaged 74.31 per cent. of white metal. The Harney Peak ores, he adds, are equally free from lead, arsenic, zinc, and other deleterious elements. Such immunities are of an importance not easy of exaggeration.

Such are the Harney Peak properties. They do not include more than a third of the lodes discovered. They comprise about two hundred lodes. The company is developing its mines preparatory to building a railroad and erecting a mill. It has over 100,000 tons of tin ore upon its dumps. It employs 350 men under the direction of experienced mining captains from Cornwall. Three million dollars are set aside for the development of the property. The company owns most of the water-power, much of the timber, and many of the ranches in the ribbon of tin-bearing slate.

This is certainly a very gratifying report. It ought to set at rest whatever doubts may exist in regard to the extent and value of our tin deposits. It would be much more a matter for congratulation if this work were being done by American capital, but it is gratifying nevertheless in that it is proving that we have here a source of wealth surpassing in magnitude the brightest dreams of its discoverers.

Nor must it be supposed that the tin deposits are limited to the locality covered by the operations of this one company. Other portions of the Hills, particularly the Nigger Hill district, contain deposits of the same metal, equal in richness to that of the Harney Peak property. Hence there remains yet a vast field to be developed, where capital may find ample return, and where speculators may reap golden harvests.

GOLD AND SILVER.

Turning now to the subject of gold and silver, we find a steady, if not marked, progress in the production of these metals. The well-established mines show a steady output of bullion, not less than last year, and other unmistakable evidences of prosperity, such as the addition of new property and an increase of facilities for the reduction of ore. Gold and silver mining in the Black Hills has been confined almost exclusively to Lawrence County, and the output of bullion is credited to

our leading mines. The following table will show the estimated output for the successive years since 1877:

1877.....	\$2,000,000	1884.....	\$3,450,000
1878-79.....	6,000,000	1885.....	3,300,000
1880.....	5,000,000	1886.....	3,125,000
1881.....	4,070,000	1887.....	3,150,000
1882.....	3,475,000	1888.....	3,150,000
1883.....	3,350,000		

The search for the precious metals is now taking a wider range, and recent discoveries and developments in the Southern and Central Hills indicate that a number of producing mines will soon be added in that neighborhood. There seems to be no good reason why the gold and silver ore should be confined to the one county, hence we may look with confidence for the development of new fields. But of vastly more importance to the mineral world is the progress which has been made in the treatment of the refractory gold ores which are found in the Black Hills. When once the secret of the proper method of treating these ores has been fully discovered a vast storehouse of wealth will be unlocked. I am glad to say that some real progress has been made in this direction within the past year. A plant costing in the neighborhood of \$100,000 and calculated to treat 100 tons of ore per day was erected in Deadwood, in the fall of 1888, for the purpose of treating these ores by a process hitherto untried in this country. High hopes were entertained of this plant. It was believed that the solution had at length been discovered and that the vast regions underlain with the stubborn ores would be made to yield their wealth. Unfortunately, however, before the process had been thoroughly tested, the entire plant was destroyed by fire. The loss has been a severe tax upon the resources of the community and upon the energy of those who undertook the enterprise, but it can not delay materially the solution of the problem. The experience derived therefrom will be valuable in future undertakings, and already plans are on foot to build new works wherein experiments by at least two different processes will be made. Before another year has rolled around we may confidently hope to see the efforts now being put forth crowned with success. In the mean time thousands of tons of ore from small mines whereon assessment work only is being done have been shipped to points on the outside, to Denver, Kansas City, Omaha, and elsewhere to be reduced. Returns from these shipments show a high grade of ore in nearly all cases, and in some particulars ores of a remarkably high grade. Such evidences as these of the value of mining property here serve to increase the faith of those who own property and must surely attract more and more the attention of those who are looking for a field of speculation.

COAL AND OTHER MINERALS.

Another problem that confronts the people of this section is that of cheap fuel. The supply of timber in the Black Hills is, it is true, well-nigh inexhaustible and would of itself furnish fuel for years to come, but our people are beginning to see that with 11,000,000 acres soon to be added to the land available for settlement on this side of the Missouri River, and the tremendous increase in population which must result therefrom within the next few years, the question of cheap fuel will have to be considered. Aside from this, coal is needed for mining and manufacturing purposes. Manufactories will be springing up in many cities and towns throughout western Dakota, and there will be need of coal to turn the wheels of industry.

A good deal of prospecting for this mineral has been done during the past year. Outcroppings indicating deposits of coal were discovered in the Southern Hills near the Red Canyon last summer, and a shaft sunk in the vicinity of Rapid City to a depth of several hundred feet passed through coal formations. North of the Hills extensive coal fields are known to exist. In the vicinity of Hoy Creek in Butte County some valuable mines have been opened up near the Wyoming line, but as yet the lack of railroad facilities has operated against the development of the coal industry in that neighborhood. Should the coming spring usher in an era of railroad building toward the Hills, the coal fields of Hoy Creek will doubtless be the scene of much activity.

Any account of the mineral resources of the Black Hills would be incomplete without a reference to the excellent quality of building-stone found in many parts. At Buffalo Gap large quantities of an excellent quality of sandstone have been opened, and this industry has increased marvelously during the past year, giving employment at present to a large number of men. Shipments have been made of ornamental sandstone for building purposes from this point to many of the large cities of the East. Our Territory is already supplying many of the cities of Nebraska, Iowa, and other neighboring States with stone for their public buildings. Without doubt this is destined at no distant day to become one of the chief industries of western Dakota.

CHURCHES AND TEMPERANCE.

The citizens of Dakota are a God-fearing people, and have not been backward in making provision for the moral and religious welfare of their families. There are more than 1,000 church societies in the Territory, representing the various denominations. The number of ministers is about 800, and the number of church buildings 650. The total value of church property is estimated at \$3,000,000.

Religion takes deep root in this free soil, and the large church attendance bespeaks the interest manifested by the people and shows their spirit in the work. There are Sunday-schools everywhere, with a total attendance reaching up into the thousands. Dakota is always well represented in the national religious and Sunday-school conventions of the country.

The educational work of the church in Dakota is shown by the several universities and academies which are elsewhere referred to, and by the Indian schools maintained by different denominations.

As an evidence of the aggressive moral spirit of her people, the proposed States of South Dakota and North Dakota have each incorporated by popular ballot a clause in its constitution, forever prohibiting the manufacture and sale as a beverage of intoxicating liquors within its borders.

BANKING.

The condition of the banking business of any State or Territory furnishes a safe basis from which to estimate the general financial health therein existing. It is therefore a just cause for congratulation that the banks of Dakota, almost without exception, have been pre-eminently successful, and that they have, by a careful, conservative course, banished to a great extent from the mind of Eastern capital that prejudice which has too often existed in the past, superinduced by overcaution and lack of reliable information as to the wealth and resources of our Territory. Dakota has yet much to hope for from Eastern capital, and presents a field unequalled in promise of security and profit.

There are in Dakota 346 banks, with an aggregate paid-up capital of \$9,130,600, and having a surplus of \$1,321,790. Among these are 59 national banks, with a capital of \$3,800,000 and surplus of \$923,700, and 207 private and State banks, with a capital of \$5,330,600 and surplus of \$398,090. Of these, 24 national banks, with a capital of \$1,540,000 and surplus of \$379,000, and 48 private and State banks, with a capital of \$1,151,500 and surplus of \$55,100, are situated in that portion of Dakota which will become the State of North Dakota; and 35 national banks, with a capital of \$2,260,000 and surplus of \$544,700, and 159 private and State banks, with a capital of \$4,179,100 and surplus of \$342,990, are situated in that portion of Dakota which will become the State of South Dakota.

One feature of the banking business in this Territory is both encouraging and worthy of notice. Local deposits have been steadily increasing, showing the growth and general wealth of the country, and giving promise of the ultimate repayment of all advances made by the East, and reasonable cause to hope that some time in the future the money of Dakota will be sufficient to conduct its enterprises.

Reports from the banks show that discounts are being well taken care of and that the prospects for the coming year are very encouraging.

Dakota has a greater number of banks than the six States of Arkansas, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee combined. Her banking capital is greater than that of Alabama, Arkansas, Colorado, Delaware, Florida, Mississippi, Nevada, North Carolina, Oregon, South Carolina, or West Virginia.

South Dakota has, in all, 235 banks, a greater number than Georgia, California, Louisiana, or any one of nineteen other States, and as many banks as Texas.

North Dakota has 100 banks, a greater number than Louisiana, either Carolina, West Virginia, Vermont, or any one of eight other States.

NEWSPAPERS.

A good way to judge of the character of a new country and its people is to read its newspapers.

The press of Dakota will stand inspection in this regard, and invites comparison with the newspapers of any State in the Union. Dakota owes much to her papers, which have ably seconded the railroads in pushing the settlement of the country and performing great service at all times in aid of its development.

Dakota has, in round numbers, 400 publications of every class. This is more than Minnesota, her neighbor on the east, can boast of, and more than any of twenty-four States out of thirty-eight, on the list for 1888.

Dakota has more than twice the number of newspapers published in Alabama, Mississippi, Maryland, Arkansas, Maine, Connecticut, West Virginia, New Hampshire, Florida, Colorado, or Louisiana.

Dakota has three times as many newspapers as the State of South Carolina, five times as many as Vermont, and ten times the number of Delaware.

The 400 publications of Dakota include 25 issued daily, 358 weekly, 12 monthly, 4 semi-monthly, and 1 quarterly. There are 392 papers printed in English, 4 in the Scandinavian languages, 3 in German, and 1 in Dutch or Hollandish. There are 382 newspapers of general information, 8 educational, 5 agricultural, 3 religious, and 1 medical journal.

South Dakota has 275 papers, or more than South Carolina, Delaware, Vermont, and Nevada combined, and as many as Minnesota.

North Dakota has 125 papers, or more than Vermont and Delaware combined; more than Montana and Washington combined, and as many as South Carolina.

POST-OFFICES.

Dakota had 1,050 post-offices on May 1, 1889, contributing a gross revenue to the Government of over \$500,000. Dakota has more post-offices than either of the following fourteen States, viz: Colorado, Connecticut, Delaware, Florida, Louisiana, Maryland, Massachusetts, Nevada, New Hampshire, New Jersey, Oregon, Rhode Island, South Carolina, or Vermont.

South Dakota has 607 post-offices, or more than Colorado, Connecticut, Delaware, New Hampshire, Oregon, Rhode Island, or Vermont.

North Dakota has 443 post-offices, or more than any one of several of the States named.

Dakota has 50 Presidential post-offices, which is more than either of twenty of the other States named.

Dakota has 9 post-offices of the second class, which is more than the States of Georgia and Tennessee have combined; more than Virginia; as many as Minnesota, and only exceeded by thirteen of the larger States of the Union.

South Dakota has 33 Presidential post-offices; 6 of the second class, and 27 of the third class.

North Dakota has 17 Presidential post-offices; 3 of the second class, and 14 of the third class.

ARTESIAN WELLS OF DAKOTA.

The artesian wells of Dakota are among the wonders of the world. Noted wells in various parts of the globe appear insignificant when compared with them. The great well in the Place Herbert, at Paris, discharges 1,000 gallons per minute, but there are a number of wells in the James River Valley of Dakota which throw out 3,000 gallons per minute. The artesian-well district lies within the valley of the James or Dakota River, flowing wells being found all the way along from Yankton, in the extreme south, to Jamestown, North Dakota.

At Mitchell, Huron, Redfield, Aberdeen, Ellendale, and many smaller places, the artesian well is a deservedly prominent institution. These wells are of inestimable value to the country. Supplying an inexhaustible source of power, sufficient for all purposes, they are worth untold millions to the people of the two Dakotas so fortunate as to possess them.

At Yankton two 6-inch wells, 600 feet deep, with a pressure of 56 pounds to the square inch, furnish power for water-works and fire protection, run an electric-light plant, tow-mill, feed-mill, furniture manufactory, and several printing establishments. One well at Huron, with a pressure of over 200 pounds to the square inch, depth 863 feet, and 6-inch pipe, runs the water-works and a number of motors for printing houses and other establishments.

Two wells at Aberdeen, 900 feet deep, with a pressure of 200 pounds to the square inch, furnish the power for water-works and a pumping sewerage system. The Jamestown well is 1,576 feet deep, with a pressure of 100 pounds to the square inch. A system of water-works is maintained as at other places, without expense of fuel or engineer.

The water, which is very hard at Yaukton, while excellent for drinking purposes, the temperature being 62 degrees, becomes quite soft 40 miles north of Huron, and is very clear and soft at Ellendale, temperature 67 degrees, and at Jamestown, with a temperature of 75 degrees.

It gives a person some idea of the power of these wells to see one operated for fire purposes. Four streams at the same time can be thrown over the highest buildings from any one of the high-pressure wells. No steam-engine is needed to help out, and the cost of the fire department is very slight.

There are some notable wells also in the Red River Valley, the well at Grafton, which is 528 feet deep, having a flow of 1,000 gallons a minute.

TIMBER.

To the traveler and to the settler who sees only the newer portions of central and northern Dakota the absence of trees has the effect sometimes of causing a feeling of homesickness. This is especially so with the wives and daughters of new-comers in such parts. But they take heart on learning that there is considerable timber elsewhere in Dakota, both north and south, and that it will grow and can be easily cultivated in every section of the Territory. Learning this, if they are wise and provident they will at once set about tree-planting in earnest.

Dakota is not all a treeless plain by any means, and the settlers on her open prairies have no reason whatever to feel discouraged about the future of their own section. All they have to do is to apply themselves industriously to the task of planting, and replanting when necessary, the timber that can and does grow in this fruitful soil.

The timber area of Dakota may be classified as native and cultivated. The extent of the native timber belts alone will surprise most people. There are more acres of timber in the Black Hills than the area of the State of Delaware.

The Red River Valley is in part a well-wooded country. A number of forest varieties are thrifty natives of the bottom-lands adjacent to the Red River of the North and its tributary streams, the Cheyenne, Wild Rice, Maple, Goose, Turtle, Forest, Park, Tongue, and Pembina Rivers.

There is considerable oak and other timber bordering on Devil's Lake, and a heavy growth of poplar, balm of Gilead, ash, and oak in the Turtle Mountains.

The timber along the Missouri River is mostly cottonwood, which in places grows to an immense size. There is not much timber on the James River, what is found there being confined to a number of straggling patches and a few larger groves. There is some timber along the streams emptying into the Missouri, in the Sioux Reservation. The Indians pitch their tepees near the timber on the Cheyenne, Moreau, Grand, and Cannon Ball Rivers. The amount of timber on the streams of eastern Dakota and elsewhere than here described is very small.

The cultivated timber area is larger than would be expected in a country so newly settled for the most part. From 1882 to 1887 inclusive there were 1,091 timber-culture proofs completed in Dakota, and during 1888 there were 150 proofs added to the number.

The timber culture act might better be amended, in the further interest of tree planting on the western prairies, than repealed; and if repealed, liberal bounties should and probably will be provided. In Dakota at the present time there are a few moderate tax exemptions on account of planting timber, and a small bounty for a term of years after

the successful cultivation for three years of the stated tract or number of rods along the highway.

The tree claims are growing and doing well, and will one day cut a very large figure, croakers to the contrary notwithstanding. But at the present time they constitute only a small part of the cultivated timbered area we speak of.

The visitor to the older Dakota will remark upon the one unexpected point of comparative resemblance between localities in that section and the villages and farms of the East.

At Yankton nearly every door-yard in the city has its own shade; in Elk Point the trees are thinned out on arbor days and the ones removed planted along the highways leading out of town; and at Sioux Falls the timber grown for shade and ornament is hardly less conspicuous.

In the country in this older Dakota groves of trees dot the landscape in all directions, and the farmer of the thrifty class esteems his 10 to 40 acres in timber as the most valuable area, acre for acre, on his farm.

Trees of every kind adapted to a temperate latitude do well in Dakota. Returns made to the immigration office in 1886 from thirty-seven counties included the following varieties as having been chiefly planted, viz: Ash, balm of Gilead, bass-wood, beech, black ash, box-elder, butternut, catalpa, chestnut, cottonwood, elm, hard maple, hickory, locust, mulberry, oak, poplar, soft maple, walnut, and willow—twenty varieties planted and doing well in Dakota. This is an excellent showing for any Western State, and one of which Dakota has reason to be proud.

DEPARTMENT OF EDUCATION.

FARGO, DAK., *October 26, 1889.*

SIR: We desire to hereby submit to you something of the educational status of Dakota at this time, when she is ready to throw off Territorial condition and enter upon statehood. We feel great satisfaction in announcing the fact that in educational affairs Dakota has never been as prosperous as she now is. The reports for the current year show a gratifying increase in the number of schools, their equipment, and the quality of work done in them. In the interest that the people take in their schools and the cheerfulness with which they provide the means for carrying them on Dakota is second to no State in the Union. The great school system of Dakota has thus far been carried on without any other means than that of direct taxation in the raising of money for its support. Not only has all this been done, but the people have not been at all backward in providing means for the founding and maintaining of a large number of private schools, most of which are schools for higher education. Ohio is said to be "the State of small colleges," and to this is attributed the very general intelligence of her people. The people of Dakota will rival even Ohio in the number of private schools that they are establishing and maintaining when her population and the rapidity of her development are considered. This is all due to the fact that Dakota has drawn the best blood from the older States to infuse into her own vigorous growth, and is another evidence of the truth of the statement of the general intelligence, enterprise, and thrift of the people of this Territory.

It is believed by all that there will be a marked improvement in our schools consequent upon the coming of statehood to the two Dakotas. The fact that the school lands will be made available for the purposes for which they were intended as soon as statehood is secured and the passage by the respective State legislatures of uniform school laws makes certain the prediction that the next two years will witness wonderful advancement in the schools of the respective States.

One of the great needs of Dakota schools has been thoroughly well-equipped teachers to conduct her schools. That this need has been recognized is evidenced by the establishment and liberal provision for normal schools, both public and private, in the Territory. Two State normal schools are now in successful operation, one located at Madison, in the southeastern, and the other at Spearfish, in the western, part of Dakota. In addition to these, there are nine private institutions, that have been appointed to do normal work under the authority of the Territorial board of education. There is provided for these a full normal course of instruction, and a principal is appointed in each school, with the approval of the board of education, who is to have charge of the normal department. The work done by these private institutions in

this way is quite satisfactory, and already a number of graduates have been sent out by them. By these means the standard of teachers is rapidly being improved in the Territory. Teachers from the old normal schools of the East are also coming to Dakota, and by this means also better-equipped teachers are taking the place of those whom force of circumstances enrolled as teachers in the early history of this Territory.

STATISTICS OF EDUCATION.

Common schools.

Number of graded schools in the Territory	160
Number of ungraded schools in the Territory	3,977
Number of schools built in the year	266
Total value of school houses, sites, and furniture	\$3,022,361
Total seating capacity of school-houses	154,512
Number of teachers employed:	
Male	1,802
Female	3,965
Total	5,767
Average monthly wages:	
Male	\$36.25
Female	32.84
Whole amount paid teachers:	
Male	243,959.98
Female	199,290.85
Number of persons in the Territory between the ages of seven and twenty, June 30, 1889:	
Male	61,284
Female	60,034
Total	121,318
Whole number of pupils enrolled	93,826
Average daily attendance	59,124
Percentage of children of school age attending school	81
Average cost per month of each pupil enrolled	\$2.70
Per cent. of attendance	74
Number of certificates issued during the year ended June 30, 1889:	
First grade	270
Second grade	1,586
Third grade	2,368
Total	4,224
Average cost of tuition for each pupil enumerated by the census	\$2.15
Average number of days school was taught	106
Total amount of bonded indebtedness	\$2,662,952
Total amount of outstanding warrants	352,324
Total indebtedness	3,015,276
Average rate of interest on bonds, per cent	7.5
Average number of mills of tax-levy in school townships	13.7
Number acres of school lands in the Territory	1,715,009
Average value per acre of school lands	\$5 to \$10
Number of districts having six months or more of school	2,497
Number of districts having four months or less	1,367
Number of schools having libraries	240
Number of volumes in school libraries	5,486
Amount paid for school-houses during the past year	\$173,355.27
Amount paid for furniture during the past year	\$61,683.45
Amount paid for apparatus during the past year	\$51,482.12
Amount paid for interest on bonds during the past year	\$213,246

NORMAL INSTRUCTION.

There are two normal schools in the State, one located at Madison, in Lake County, and the other at Spearfish, in Lawrence County. These normal schools are in charge

of able corps of instructors, are well equipped, and are doing as good work as could be expected of such institutions in a new State. Besides these normal schools there is a normal department in the University of Dakota, at Vermillion, in Clay County, and another in the University of North Dakota, at Grand Forks, in Grand Forks County, doing the same good work as the regular normal schools. Nine private schools and colleges have normal classes instructed by skilled normal-school workers under the supervision of the board of education.

SCHOOL LANDS.

Dakota has been the recipient of generous donations of lands by the National Government for educational purposes, receiving two sections in every section of 36 sections for common school purposes, and large grants for higher and special institutions of learning.

There are in this Territory 1,715,009 acres of school land, the average value per acre of which is \$5.79. The total value of school lands in the Territory is, therefore, \$9,929,902.11. In some of the older and richer counties considerable of this land has been cultivated by private individuals without rendering any compensation therefor to the Territory, thus in a measure exhausting the richness of the soil. There have been thus cultivated 89,775 acres of school land.

During the Territorial state these lands were not available for school purposes, but now, at the dawn of statehood, the provisions of each of the constitutions of North Dakota and South Dakota become matters of intense public interest. Under statehood the above-mentioned trespasses on school lands will cease, and the respective States will receive returns for the use of said lands in the form of rents.

The provisions of the constitution of North Dakota are epitomized as follows:

(1) All moneys derived from the sale of school lands shall be deemed a trust fund and shall remain a perpetual fund for the maintenance of the schools of the State, the principal of which shall forever remain inviolate, and the State shall make good all losses that may occur in this fund.

(2) The interest and income of this fund, together with all money derived from fines for the violation of State laws, shall be used for the benefit of the common schools, the unused interest at the end of any year to become a part of the principal. No part of the school fund can ever be used for other than school purposes.

(3) After one year from the assembling of the first State legislature these lands may be sold upon the following conditions: One-fourth may be sold within five years after they become salable, and not more than one-half within ten years after they become salable. Coal lands shall not be sold. The legislature has the right to lease the school lands, under certain restrictions, but they can not be leased for other than meadow and pasture purposes, and for no longer period than ten years.

(4) The superintendent of public instruction, the governor, attorney-general, secretary of State, and State auditor constitute a board of commissioners for the care of the school lands, and have entire charge of their appraisement, sale, rental, or disposal in any way. They also have control of the school funds, and make all investments thereof.

(5) The county superintendent, the chairman of the county board, and the county auditor constitute a board of appraisal for the lands in each of the counties.

(6) No lands shall be sold for less than \$10 per acre, and on the following conditions: One-fifth of the price down, one-fifth in five years, one-fifth in ten years, one-fifth in fifteen years, and one-fifth in twenty years, with interest at not less than 6 per cent. per annum, payable in advance.

(7) The moneys of the permanent school fund and other educational funds shall be invested only in bonds of school corporations within the State, bonds of the United States, bonds of the State, or first mortgages on farm lands within the State.

The provisions of the constitution of South Dakota respecting its school lands are, in brief, as follows:

(1) All proceeds of the sale of public lands, all such per centum as may be granted by the United States for the sale of public lands, all gifts or grants, and any funds that may in any way be acquired for the use of the public schools shall forever remain inviolate and can not be decreased, and all losses shall be made good by the State.

(2) The interest and income from this fund and proceeds from all fines for the violation of State laws shall be used for the maintenance of the public schools, and no part of these funds shall ever be diverted for other uses.

(3) After one year from the assembling of the first State legislature the lands can be sold upon the following conditions: Not more than one-third may be sold within the first five years, and not more than two-thirds within the first fifteen years after the title to these lands is vested in the State. The most valuable lands shall be sold first and all such lands as are of especial value for other than agricultural purposes. The commissioner of school and public lands, the State auditor, and the county superintendent in each of the counties shall constitute a board for the appraisement of the school lands of each county.

(4) No lands shall be sold for less than \$10 per acre unless after the year 1900 two consecutive legislatures concur in directing otherwise.

(5) The school lands shall be sold only upon the following conditions: The purchaser shall pay one-fourth of the price in cash, one-fourth in five years, one-fourth in ten years, and one-fourth in fifteen years, with interest thereon at not less than 6 per cent. per annum, payable in advance. All sales must be conducted through the office of commissioner of school and public lands.

(6) All sales of school lands shall be at public auction and to the highest bidder. After four years all lands that have been appraised shall be re-appraised.

(7) School lands may be leased but only for meadow and pasture purposes and only with the rents paid in advance and no longer than for a term of five years.

(8) The moneys of the permanent school fund and other school funds shall be invested only in first mortgages upon good and improved farm lands, in bonds of school corporations within the State, or in bonds of the United States or of the State of South Dakota.

(9) All moneys designated for investment in farm mortgages or in bonds of school corporations shall be divided among the counties in proportion as nearly as possible to the population. The respective counties shall have the control of such money as a trust fund and be responsible to the State for all losses that may occur in handling it. Not more than \$500 shall be loaned to any one person upon farm mortgage and only to the extent of one-half valuation. The counties using this money shall make semi-annual statements as to the condition of the funds and also make semi-annual payments of the interest to the State treasurer.

(10) The legislature may add to the money for school purposes thus derived as they may deem necessary in order to provide for a good and efficient system of public schools.

The following counties deserve special mention on account of the annexed estimated values of their school lands per acre, to wit:

Yankton	\$14. 03
Cass	11. 05
Clay	11. 00
Logan	10. 00
Pembina	10. 00

In the remaining counties the school lands vary in estimated value from \$1.25 in Custer County to \$9.85 in Brown County, those in most of the other counties being estimated at \$4, \$5, and \$6 per acre.

SCHOOL SYSTEM.

One of the great disadvantages in the operation of our system of schools is the presence of two distinct plans therefor, viz: There is the township system, under which there are now seventy-two counties operating, and the district system, under which there are sixteen counties operating. The presence of these two systems is a source of constant annoyance and irritation as well as of expense additional to what would be otherwise. There is no doubt but that the respective legislatures of North and South Dakota will at once proceed to unify their systems of school organization. Sentiment in both the South and North is divided on the question of what is the best system to be adopted. The township system has these points to commend it to the people of the Dakotas: It has the fewest possible school officers and no "fifth wheels" in its machinery; the idea of unity of interest is carried entirely through the system, from the State department to the subdistrict of each township; it centralizes responsibility, and thereby secures better service from its officers, for where twenty-five men have the care of the school interests of a township they do not feel their individual responsibility to the people and to the schools as would three men, or one man intrusted with the same duty. It gives more complete and freer communication between the subordinate officers and the heads of the county and State departments of education; the school work being performed by fewer officers there is an opportunity for better talent to be secured in filling the offices; greater facility and accuracy in the gathering of educational statistics; the securing of uniform standard of education in the schools and the use of uniform text books, whereby their price can be reduced. These are the chief merits of the township system, which is now in successful operation in the majority of the counties of Dakota. The probability is that both North and South Dakota will, in the near future, adopt the township system of organization.

The organization of the present system of schools in seventy-two counties of Dakota is as follows: At the head of the State department is the superintendent of public instruction and the board of education, of which the superintendent is *ex-officio* member. The board of education consists of three members, two of which are appointed

by the governor. The present personnel of the board of education is as follows: Superintendent Leonard A. Rose, of Fargo, president; C. M. Young, of Tyndall, secretary, and A. T. Free, of Yankton, vice-president. The general supervision and control of public instruction is vested in this board. At the head of education in each county there is a county superintendent, who has the general supervision of the schools in the county under the instruction and authority of the Territorial board of education. Each township has a board of education composed of one member from each subdistrict of the township. This board has control of the schools of the township, under the supervision of the county superintendent. The employment of teachers becomes the duty of the subdirector, acting by and with the advice and consent of the people of his subdistrict. It is urged against this system that there are too many officers, and that the system is too expensive in its operation. While being a township system this charge is undoubtedly true, and a change needs to be made by reducing the number of officers, and thus at once reduce the expense of operating the schools and secure more promptness and greater efficiency in the school work of the township.

QUALIFICATIONS AND LICENSURE OF TEACHERS.

There are three grades of certificates, viz, first, second, and third, valid respectively for periods of two years, eighteen months, and one year. For second and third grades, teachers are required to pass a satisfactory examination in the following branches: Reading, writing, orthography, geography, grammar, arithmetic, history, algebra, physiology, and hygiene. For the first grade, in addition to the foregoing, teachers are required to pass examinations in geometry, physical geography, book-keeping, civil government, natural philosophy, and theory and practice of teaching. Superintendents of the counties conduct the examinations in each of the counties and license the teachers who pass a satisfactory examination. The questions for these examinations are supplied by the Territorial board of education. In addition to these licenses there are two grades of certificates granted by the Territorial board of education, viz, a professional certificate and a normal certificate. The former is granted only to those persons who pass a satisfactory examination before the board. This certificate is valid for the term of ten years. The normal certificate is granted to all graduates of the Territorial normal schools and graduates of normal schools in other States of the Union that have an established reputation for complete and thorough work. The law has never yet authorized the issuing of life certificates. The aim has been in the Territory to require high qualifications in the teachers, and expect a correspondingly high grade of work in the schools. In this there has been an attainment of the ends sought.

STATE INSTITUTIONS.

University of South Dakota.—This institution is located at Vermillion, in Clay County, on the Missouri River, in the extreme south of the Territory. It has a fine building of Sioux Falls granite, the main part of which is 104 by 72 feet, with two wings 48 by 62 feet each. It has five departments, viz, collegiate, normal, preparatory, musical, and commercial. Edward Olson, M. A., Ph. D., is president of the institution, and his management has been marked by a striking increase in the attendance upon the school, an advance in the standard of its work, and a thorough systematizing of the work in all departments of the institution. The students sustain two excellent periodicals, one weekly and one monthly. They also have four flourishing literary societies, two religious associations, and several athletic organizations. The enrollment in 1887 was 197, in 1888 it was 307, in 1889 it has reached the figure of 476. Seventy-five per cent. of its students are the sons and daughters of Dakota farmers, coming from thirty counties in Dakota and nine States. The average age of the pupils is 19. The total appropriation for last year was \$35,000, which was expended as follows:

Salaries of professors and instructors.....	\$25,000
Engineers and janitors.....	1,250
Librarian.....	500
Apparatus and cabinets.....	750
Furniture.....	750
Fuel and lights.....	3,500
Contingent fund.....	500
Repairs.....	250
Improvement of ground.....	500
Water supply and drainage.....	1,250

University of North Dakota.—This university is located in the northern part of the Territory at Grand Forks, in Grand Forks County, in the valley of the famous Red

River of the North, the region of No. 1 hard wheat. It has a fine brick building, stone trimmed, 55 by 150 feet, four stories high. Homer B. Sprague, A. M., Ph. D., is the efficient president of this institution and has with him a faculty of six members. In 1887 the enrollment was 75, in 1888 it was 98, in 1889 it was 199. Of these 199, 106 were in the preparatory department, 60 in the normal department, and 20 in the college proper. The institution has three literary societies, one athletic association, and one Young Men's Christian Association organization. There is what is known as "field day," when prizes are bestowed for excellence in the athletic sports. The institution is arranging for the elimination of the preparatory work from its curriculum in order that the entire force of its faculty may be devoted to the strictly collegiate work. The institution is in a very flourishing condition.

The Agricultural College of Dakota.—This institution is located at Brookings, in Brookings County, in the east central portion of the Territory, in one of the best sections of Dakota. The buildings of this institution are the college hall proper, a gentlemen's dormitory, a ladies' dormitory, botanical laboratory and green-house, and a building for the mechanical department. There is a farm of 240 acres that belongs to this institution and is operated by it, upon which there are all the needful buildings for the carrying on of experimental farm work, housing the large amount of stock owned by the institution, the necessary machinery, etc. The institution offers two courses, one for young men and one for young women. The one for young men is made up of those literary and scientific studies usually found in colleges of the best grade, to which is added some kind of industrial study, as agriculture, horticulture, or some line of mechanical work. For the young women there is provided study and work in domestic economy. The courses are four years long. The aim is to give such a liberal training in the literary, scientific, and industrial departments of this school as will best fit the young men and women for actual business life. The faculty consists of 16 able instructors. Louis McLouth, A. M., Ph. D., is at the head of this institution as its president and is eminently well fitted for the responsible position. The enrollment for the past year is 250, 22 more than for the previous year. Of this number, 126 are pursuing college studies. There were 17 graduates from this institution last year. The appropriation to this institution by the last legislature was \$55,000. There is granted to this institution by the conditions of the omnibus bill 160,000 acres of land as a perpetual endowment.

The Territorial Normal School at Madison.—This school is located in Lake County, in a most healthful locality, a rich agricultural region where the surface of the prairie is diversified by beautiful lakes. The school has fine buildings which have been erected to take the place of the former ones that were burned a year or two ago. The school was opened December 5, 1883. Its enrollment for this year was 246 in the normal department and 141 in the model school. These students came from thirty-five counties in Dakota and from four States. Five North Dakota counties and thirty South Dakota counties were represented in the school. The States represented were Iowa, Minnesota, Pennsylvania, and Wisconsin. The school has four courses of study, viz, the elementary, requiring three years; the advanced course, requiring four years; the classical, which includes Latin, and a professional course for those who have completed the three years' course elsewhere. The school is manned by a corps of seven instructors, at the head of which is Hon. W. H. H. Beadles, ex-Territorial superintendent of public instruction.

The Territorial Normal School at Spearfish.—This school is located in what is known as "The Black Hills Country," one of the richest regions of Dakota, which is blessed not only with a fine agricultural soil but has untold mineral wealth beneath its surface. This school has a faculty of seven instructors, at whose head is Fayette L. Cook, A. M., under whose guidance the school is progressing finely.

The School of Mines.—This school is located at Rapid City, near the famous mineral region of the Black Hills, where it has every opportunity for the pursuit of geological studies and the acquiring of ample specimens for its cabinets. There are three courses provided by the school, viz, mining engineering, civil engineering, and the scientific. These courses are all four-year courses, and aim to fit young men in the special lines of work enumerated above. The school has commodious buildings and an able corps of instructors, at the head of which is Franklin R. Carpenter, A. M., dean and president of the faculty.

The Dakota Deaf-Mute School.—This school is located at Sioux Falls, and is under the charge of Professor Simpson, who has held the position for some years. Its location is convenient and healthful. The attendance is between 50 and 60, and very efficient work is done. The school has a fine equipment of buildings, and is well supplied with every requirement for the successful prosecution of its much-needed work.

The Dakota Reform School.—This school for erring boys and girls is located at Plankinton, in Aurora County, and was only opened formally in November, 1888, when it received its first pupil. Its enrollment is now 33—24 boys and 9 girls. The pupils are instructed in the common branches, music, and general information,

besides instruction in some kind of manual labor. Various industries will ere long be represented in the school, in order that the pupils may be trained in various useful occupations. The present efficient superintendent is Prof. C. A. Ainsworth. He has a full corps to assist him in his work. The buildings occupied by the school were erected at a cost of \$30,000.

PRIVATE INSTITUTIONS FOR HIGHER EDUCATION.

Pierre College.—This college is located at Pierre, in Hughes County, on the Missouri River. At the recent election in South Dakota, Pierre has been made the capital of the State, which materially brightens the prospects of the college of Pierre, as the city will soon increase much in population. The buildings of the institution were erected at a cost of \$43,000. The school is under Presbyterian auspices. William Blackburn, D. D., is the president of the institution and has a corps of six teachers to assist him. The school has a normal department in which there is an enrollment of 27.

Yankton College.—This college is located at Yankton, in Yankton County, on the Missouri River, and is under the auspices of the Congregational denomination. There is an able corps of teachers, and the institution is presided over by the Rev. Joseph Ward, D. D. The buildings of the school are valued at \$40,000. The school also has a normal department, the work of which is under the general supervision of the Territorial board of education.

Dakota University.—This school was established in 1885, and is under the auspices of the Methodist Church. A. W. Adkinson, vice-president, is the acting president of the institution. Besides the regular literary department there is a commercial department and a normal department, operated under the supervision of the Territorial board of education. Two students were graduated this year with the degree of B. S. The faculty consists of ten members and the enrollment is over 100.

Sioux Falls University.—This school is located at Sioux Falls and is under the auspices of the Baptist denomination. Rev. E. B. Merideth, A. M., is the president of the institution, with a corps of seven instructors and an enrollment of over 100. The property is valued at \$30,000.

All Saints School.—This school is located at Sioux Falls, by the Episcopal Church, and the president is Rev. W. H. Hare, D. D. It has a faculty of about twelve members and an enrollment of nearly 100. It has property valued at \$37,000.

Jamestown College.—This college was located at Jamestown by the Presbyterian Church. The president is H. G. Mendenhall, A. M. The school has a normal department under the authority of the Territorial board of education. The property of the school is valued at \$35,000.

Tower College.—It is located at Tower City, by the Baptist Church. Its president is L. C. Dame, A. M. It has an enrollment of about 50.

Groton College.—It was established by the Presbyterian Church. Rev. James Marshall is president of the institution, with a faculty of six. It has an enrollment of about 75. The value of the property of this school is \$25,000.

Redfield College.—This institution is under the auspices of the Congregational Church. Rev. David Beaton, A. M., is the president of the institution. There is a faculty of eight teachers. The property of the institution is valued at \$20,000. The institution has a normal department under the supervision of the Territorial board of education.

Augustana College.—This institution is located at Canton, and is under the fostering care of the Lutheran Church. The president of the college is M. D. Miller. It has three teachers and an enrollment of 75. Its property is valued at \$8,000. Recent changes in the faculty are reported, by one of which Rev. C. S. Salverson supersedes the former-mentioned president.

Scotland Academy.—This is another institution that was founded by the Presbyterian Church, and is located at Scotland, in the southeast of the Territory. The principal of this academy is Prof. A. A. Love. The institution has a corps of five instructors. It has an enrollment of about 25. Its school property is valued at \$10,000. The school is appointed to do normal work by the board.

Arvilla Academy.—This school is located at Arvilla, in Grand Forks County. Prof. J. A. Brown is principal of the academy. Four teachers are employed, and there is an attendance of about 40. It has buildings which are valued at \$3,500. This school also does normal work in the preparation of teachers.

Fargo College.—This institution has recently been organized, and is located at Fargo, under the auspices of the Congregational Church. The president is Rev. George Barnes. Fine buildings are being erected in South Fargo, the estimated cost of which is \$40,000. The school is already in actual successful operation. It will soon have a full corps of able instructors.

Catholic schools.—The following schools have been established in the Territory by the Catholic Church; no report of them has reached this office, and we are not able

to give a detailed report of them in consequence. The Academy of the Sacred Heart is located at Yankton. The Academy of St. Joseph is located at Fargo; St. Mary's Academy at Bismarck. There are also Catholic schools located at Grand Forks and Aberdeen.

INDIAN SCHOOLS.

There are a number of schools designed for the education of the Indians, which are situated upon the reservations or upon the borders thereof. These schools are under the control of the various religious denominations, and are assisted by the General Government in their laudable work. The aggregate property owned by these institutions is, at the least, \$100,000. They are manned by efficient and devoted teachers. The verdict of these, after many years of experience in this work, is that the Indian is teachable, tractable, industrious, and capable of receiving higher education. In one of these institutions there is a newspaper that is printed in the Indian tongue, the mechanical work on which is done entirely by Indians, and the literary is also largely done by the red men. In these institutions the Indian is taught the English branches and instructed in the industrial arts. The Indian boys and girls are taught the culinary art in all its lines, and are able to acquit themselves creditably in all the details of the art. It is a fact now generally admitted that these schools are doing more for the uplifting of the Indian and his transformation into a civilized American citizen than all other means that are now being employed for that purpose. These schools deserve every encouragement.

GRADED SCHOOLS OF THE CITIES.

This report would not be complete without the following report of the graded schools of the cities of Dakota. These schools form prominent features in the educational work of this Territory; they are graded upon the best models presented by the older Eastern States from the primary department to the high school. Their courses of study will compare not unfavorably with the courses of schools in the East in towns many times the size of ours. In the following table the large percentage of the pupils enumerated that are enrolled in the schools is a significant feature and one that speaks well for our communities.

City.	Superintendent.	Teachers.	Pupils in the enumeration.	Pupils enrolled.
Fargo.....	E. H. Smith.....	22	1, 156	1, 147
Sioux Falls.....	L. McCarthy.....	21	.....	1, 306
Grand Forks.....	C. H. Clemmen.....	14	1, 301	827
Yankton.....	J. D. Stay.....	12	1, 046	669
Aberdeen.....	B. F. Hood.....	12	421	692
Mitchell.....	H. E. Kratz.....	9	500	495
Huron.....	A. M. Rowe.....	12	809	680
Watertown.....	.....	13	1, 175	667
Bismarck.....	J. Goodykoontz.....	8	421	394
Jamestown.....	.....	11	594	510
Brookings.....	M. A. Robinson.....	6	341	351
Pierre.....	E. C. Patterson.....	9	287	289
Vermillion.....	E. E. Collins.....	4	435	288
Deadwood.....	A. T. Free.....	5	426	275
Scotland.....	R. C. Enos.....	3	350	250
Lisbon.....	W. E. Goodrich.....	5	206	247
Canton.....	L. R. Rowell.....	5	329	244
Wahpeton.....	W. C. Crocker.....	4	410	220

These schools are all supplied with elegant and commodious buildings, the cost of which ranges from \$6,000 to \$80,000. As a general thing these schools have a good supply of apparatus with which to carry on their work. The best trained teachers that can be found are employed to teach in these schools and good salaries are paid. These schools are now ready to take rank with the best of their kind in any of the States.

EDUCATIONAL DEVELOPMENT OF DAKOTA.

In the following table we give some statistics to show the educational development of the schools of Dakota. We believe that no State of the Union has ever made a better record than the one here exhibited by Dakota. It is a striking commentary as to the interest that the people here take in their schools:

Year.	Youth of school age.	Enrolled in public schools.	Average daily attendance.	Ungraded schools.	Average days taught.	Teachers.	Average monthly pay of men.	Average monthly pay of women.	Value of school property.	Expenditures for school purposes.
1875.....	8,343	4,428	.....	.....	.....	208	\$35.00	\$25.00	\$24,926	\$32,603
1879.....	18,535	9,822	4,681	315	97	464	36.00	25.00	133,952	75,959
1883.....	56,476	33,988	20,560	1,356	93	1,517	39.70	30.70	937,764	529,837
1887.....	108,240	87,131	58,379	3,856	112	4,924	34.81	30.36	3,265,590	1,553,573
1888.....	104,886	83,079	46,060	3,977	106	5,744	35.25	31.84	2,844,511	1,621,012
1889.....	105,685	98,683	.....	4,461	114	6,158	35.36	31.40	3,022,361	1,959,879

In 1875 the enrollment in the schools of Dakota was only about 50 per cent. of the number of youth enumerated by the census. In 1888 there was about 79 per cent. of the youth of school age enrolled in the schools, while in the year 1889 there was 93 per cent. enrolled. This is a fine showing for any community, and one that the Territory of Dakota has especial reason to be proud of. The enrollment of 1889 is over twenty times that of 1875, and is an increase of 20 per cent. on that of the preceding year, viz, 1888. In fourteen years her teachers have increased from 208 to 6,958, the number that Dakota now employs. There has been an increase of about 7 per cent. in the number of teachers compared with last year. These statistics are sufficient to justify the statement that the people of Dakota consider their school interests the most important and the first to demand their attention.

COMPARISON WITH OTHER STATES.

Dakota will not suffer by comparison with other States of the Union. The valuation of the school property of Dakota is greater than that of the States of Arkansas, Delaware, Florida, Kentucky, Maine, Maryland, New Hampshire, North Carolina, Oregon, Rhode Island, Tennessee, Virginia, or West Virginia.

The number of teachers employed in Dakota exceeds the number in any of the following States; Alabama, Arkansas, California, Delaware, Florida, Kentucky, Louisiana, Maryland, Nevada, New Hampshire, New Jersey, North Carolina, Oregon, Rhode Island, South Carolina, Vermont, and West Virginia.

Dakota pays her teachers better wages than Kentucky, Louisiana, Maine, Mississippi, North Carolina, South Carolina, Tennessee, Vermont, Virginia, or West Virginia pay theirs.

Although a Territory, she has more days of school than Alabama, Florida, Kentucky, Louisiana, New Hampshire, North Carolina, Oregon, South Carolina, Tennessee, Texas, or West Virginia.

She enrolls more pupils than any of the following States: Delaware, Florida, Louisiana, Nevada, New Hampshire, Oregon, Rhode Island, and Vermont.

Another feature that is important as showing the status of the schools, is the percentage of children that are enrolled in the schools of the State. Dakota has a larger per cent. of her children of school age enrolled in her schools than is true of any of the following States: Alabama, Arkansas, California, Colorado, Delaware, Georgia, Iowa, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, West Virginia, Wisconsin.

There are only two or three States in the Union that show a higher percentage of pupils in regular attendance upon the schools than Dakota. Considering the fact that Dakota is a country that is recently settled, comparatively, and also her thin settlement and the consequent long distances that pupils reside from school, the above record is especially significant.

EDUCATIONAL PAPERS.

There are two papers in Dakota that are especially devoted to educational subjects, The Dakota Educator, in South Dakota, in which a large number of the leading edu-

cators of the Territory are interested, and The Common School of North Dakota. Besides these the teachers of the Territory subscribe liberally for the leading educational papers of the East.

TEACHERS' INSTITUTES.

The teachers' institute is a means that is now very largely employed in Dakota for the training of teachers, the arousing of interest and the stirring up of renewed zeal in the work, keeping the teachers abreast of the best thought in the field of education and the latest methods advanced. The aim is to hold two institutes in each county each year, and for this purpose the Territory has appropriated out of its general fund the sum of \$50 per year for each county that will hold two institutes during the year. Able and qualified instructors are appointed by the board of education to conduct these institutes. In some of the counties there is a demand for longer sessions than is provided for in the law or than there are funds from the Territory to pay for. In these cases some of the counties have made the practice to hold three or four weeks session of a normal institute, paying the expenses thereof by a small tuition from the teachers themselves. The fees collected by county superintendents for examinations of teachers are devoted to the same purpose. There has been a marked growth and development in the line of institute work in the past two years. The effect has been manifest in a higher grade of work that the teachers are already doing and the increased interest that is taken in the work by teachers and patrons alike.

TEACHERS' ASSOCIATIONS.

There are three Territorial associations of teachers, viz, the South Dakota Teachers' Association, the North Dakota Teachers' Association, and the Sioux Valley Teachers' Association. Prof. H. E. Kratz, of Vermillion, is the president of the one in South Dakota, and Prof. O. T. Denny, of Jamestown, is the president of the one in North Dakota. Besides these organizations there are numerous ones in the various counties, and in some of the counties there are organizations of teachers in the townships of the county. All of these organizations are most useful and tend to the development of the teacher.

OTHER AIDS FOR TEACHERS.

A reading circle has been established by the teachers of South Dakota, and has been in successful operation for three years. Its membership at present numbers 276 teachers and is rapidly increasing. The fees received from all Territorial certificates granted is appropriated by law to the reading circle for its support. It is probable that at the first meeting of the legislature of South Dakota its support will be amply provided for by other means. W. H. Dempster is the president of the circle and H. E. Kratz is its efficient secretary.

Respectfully submitted.

LEONARD A. ROSE,
Superintendent Public Instruction, Territory of Dakota.
CLARK M. YOUNG,
Secretary Territorial Board of Education.
ALBERT T. FREE,
Vice-President Territorial Board of Education.

Hon. A. C. MELLETTE,
Governor of the Territory of Dakota.

ASSESSMENT AND TAXATION.

Below is given in tabulated form a comparative statement of the valuation of the different forms of property as returned by the various assessors in the years 1888 and 1889. It will be seen by this statement that the increase in valuation the past year has not been large, being less than 2 per cent. This apparent slight increase is accounted for by the fact that several millions of acres of railroad lands which were assessed in 1888 were withdrawn from assessment the present year because of an act of the last legislature providing for a tax on gross earnings in lieu of all other taxes upon railroad property. It will also be observed that a lower valuation was placed upon most classes of

property under a mistaken idea on the part of local assessors that a low valuation would relieve their communities of an undue proportion of Territorial taxes. From these explanations it will be understood that there has been a healthy and satisfactory increase in valuation in the Territory. There has been an increase in the number of each class of live stock, which is a strong and sure indication of increased prosperity among the agricultural classes of Dakota. The table here appended is believed to contain information that will be of value:

Comparative table.

Items.	1888.	1889.	Items.	1888.	1889.
Total assessment ..	\$161,420,974.32	\$164,199,876.90	Number of cattle..	597,808	623,734
Acres of land.....	23,832,816.85	23,284,397.50	Value of cattle....	\$7,634,548.94	\$7,292,571.75
Value of land.....	\$91,875,729.84	\$91,536,734.15	Average value....	\$12.77	\$11.69
Average value per			Number of sheep..	152,396	178,467
acre	\$3.85	\$3.93	Value of sheep....	\$207,790.98	\$242,934.85
Value of town lots	\$26,125,555.80	\$28,530,279.00	Average value....	\$1.36	\$1.36
Value of merchan-			Number of swine..	174,028	255,622
dise	\$6,571,007.00	\$6,239,113.00	Value of swine...	\$446,811.30	\$606,571.80
Capital in manu-			Average value....	2.57	2.37
factures.....	\$893,850.00	\$786,276.00	Value of vehicles	2,250,964.25	2,153,866.60
Number of horses..	268,410	296,825	Moneys and credits	2,227,115.00	2,494,617.75
Value of horses....	\$12,120,346.58	\$12,855,105.00	Household furni-		
Average value....	\$45.16	\$43.31	ture	368,636.60	285,501.00
Number of mules..	16,057	16,305	Stocks and shares.	2,837,930.93	2,688,254.00
Value of mules	\$822,772.09	\$764,085.00	All other property	7,037,915.01	7,723,967.00
Average value....	\$51.24	\$46.86			

The rate of tax levy for Territorial purposes has been fixed at 3 mills on the dollar of valuation, which will yield a revenue of \$492,599.63, which, together with the tax on the gross earnings of certain corporations, must supply the revenue for Territorial expenses. Below is given up the entire estimated receipts of the Territory for the ensuing year from different methods of taxation and the different sources of revenue:

RECEIPTS.

From direct tax on assessed valuation	\$492,599.63
Gross earnings of railroads.....	82,059.30
Gross earnings of insurance companies	21,165.60
Gross earnings of telegraph companies.....	1,025.00
Total.....	596,849.53

DISBURSEMENTS.

Following is given the definitely appropriated and estimated expenses of the Territory for the present Territorial fiscal year, exclusive of legislative expenses:

Support of public institutions.....	\$355,807.11
Other expenses of Territory	179,813.19
Interest on bonds.....	61,104.99
Total.....	596,725.29

PUBLIC INSTITUTIONS.

There is also hereto appended a statement of the cost and appropriations for maintenance of each of the public institutions of the Territory:

	Total cost of build- ings and perma- nent improve- ments.	Appropriated for maintenance.	Pay and expenses of trustees, Nov. 30, 1888, to Sept. 30, 1889.
Agricultural College, Brookings.....	\$100,140	\$53,375	\$602.33
University of North Dakota, Grand Forks.....	110,941	57,000	700.10
University of Dakota, Vermillion.....	88,500	70,000	706.45
Normal School:			
Madison.....	35,800	31,700	303.88
Spearfish.....	30,000	31,100	141.45
School of Mines, Rapid City.....	35,820	33,500	362.50
School for Deaf Mutes, Sioux Falls.....	53,512	33,800	584.50
Capitol and grounds, Bismarck.....	200,000	10,000	.....
Dakota Penitentiary, Sioux Falls.....	101,475	72,300	462.95
Bismarck Penitentiary, Bismarck.....	95,281	57,600	2,146.08
North Dakota Hospital for the Insane, Jamestown.....	276,200	114,500	1,398.76
Dakota Hospital for the Insane at Yankton.....	239,960	111,075	725.40
Dakota Reform School, Plankinton.....	30,000	11,000	1,310.07
Soldiers' Home, Hot Springs.....	45,000	.....	1,126.91
Total.....	1,442,629	686,950	10,571.38

FINANCES OF THE TERRITORY.

OFFICE OF AUDITOR, *Bismarck, October 20, 1889.*

SIR: In compliance with your request, asking for a statement of the bonded indebtedness of the Territory, I have the honor to submit the following:

Total bonded indebtedness to date, \$1,250,007.46, expended in building and furnishing the following public institution:

Date of is- sue.	Purpose of issue.	Rate.	Maturity.	Amount.
		<i>Per cent.</i>		
May 1, 1883	Insane Hospital, Yankton.....	5	5-20	\$77,500.00
May 1, 1887	do.....	4½	5	92,500.00
May 1, 1883	Deaf-Mute School, Sioux Falls.....	6	10-20	12,000.00
July 1, 1885	do.....	6	10-20	16,000.00
May 1, 1887	do.....	5	10-20	23,000.00
May 1, 1883	University of Grand Forks.....	6	10-20	30,000.00
July 1, 1885	do.....	6	10-20	24,000.00
May 1, 1887	do.....	4	10	20,000.00
May 1, 1883	University of Vermillion.....	6	10-20	30,000.00
May 1, 1885	do.....	6	5-20	57,000.00
May 1, 1887	do.....	4½	20	30,000.00
May 1, 1883	Penitentiary, Sioux Falls.....	6	5-20	30,000.00
May 1, 1887	do.....	4½	10-20	14,300.00
May 1, 1883	Penitentiary, Bismarck.....	6	5-20	50,000.00
July 1, 1885	do.....	6	10-20	14,600.00
May 1, 1887	do.....	4½	10-20	29,000.00
1883	Agricultural College, Brookings.....	5	10-20	23,000.00
July 1, 1885	do.....	6	10-20	20,000.00
May 1, 1887	do.....	4½	20	54,500.00
May 1, 1884	Insane Hospital, Jamestown.....	6	10-20	50,000.00
May 1, 1885	do.....	6	5-20	63,000.00
May 1, 1887	do.....	4½	15	153,000.00
July 1, 1885	Normal School, Madison.....	6	10-20	13,600.00
May 1, 1887	do.....	4½	15	35,800.00
July 1, 1885	School of Mines, Rapid City.....	6	10-20	10,000.00
May 1, 1887	do.....	5	10-20	23,000.00
May 1, 1887	Reform School, Plankinton.....	5	10-20	30,000.00
May 1, 1887	Normal School, Spearfish.....	5	10-20	25,000.00
May 1, 1887	Refunding bonds to refund 6 per cent. 5-20 year bonds issued May 1, 1881.....	4½	10-20	90,000.00
May 1, 1889	University of North Dakota, Grand Forks.....	4	10-20	22,700.00
May 1, 1889	Soldiers' Home, Hot Springs, South Dakota.....	4	20	45,000.00
Apr 1, 1889	Capital refunding warrants to refund \$52,758.58 audi- tors' warrants at 10 per cent.....	5	5	75,211.24
Apr. 1, 1889	Capital refunding warrants to refund a claim account of capitol building.....	5	2-5	8,296.22
	Total.....			1,250,007.46

The bonds issued by the last legislature were issued at 4 per cent. rate and sold for par, and $3\frac{1}{2}$ and $5\frac{1}{2}$ per cent. premium for University of North Dakota and Soldiers' Home bonds, respectively.

The fact that so small an issue at so low a rate of interest sold for so high a premium is a very gratifying exhibit of our credit. Such an event is unparalleled in the history of this Territory or any other, and shows her high financial standing.

The proceeds of the University of North Dakota bonds went to re-imburse the citizens of Grand Forks for rebuilding and repairs of damages caused by a storm in 1887. Proceeds of Soldiers' Home bonds are for erecting and furnishing a building at Hot Springs, in the Black Hills. The refunding of the auditor's warrants outstanding for construction, etc., of the capitol building was authorized by the legislature, and reduces the rate of interest from 10 per cent. to 5 per cent. after computing the interest at 10 per cent. up to the time of refunding. The \$77,500 5 per cent. bonds, May 1, 1883, for hospital for insane at Yankton, and \$30,000 6 per cent. bonds, May 1, 1883, for penitentiary, Sioux Falls, on which the Territory has had the option since May 1, 1888, will be refunded at 4 per cent. rate, and I expect them to sell at fully as good premium as the last.

Very respectfully,

J. M. BAILEY, JR.,
Treasurer.

Gov. A. C. MELLETTTE.

VALUATION AND ASSESSMENT.

BISMARCK, DAK., August 20, 1889.

SIR: At your request, the following tables of assessment and valuation statistics have been prepared. While the total assessment for 1889 is but about three millions more than in 1888, the fact that the large bodies of railroad lands of North Dakota were assessed last year but owing to the law of the legislature were not assessed this year would make a difference of several millions. It will be seen that there has been a slight increase in average value of land and swine, while there is a decrease in average value of horses, mules, and cattle, and sheep average the same. The total value of town lots has increased nearly two and one-half millions. Of the entire valuation 56 per cent. is land, 13 per cent. live-stock, and 31 per cent. unenumerated, such as town lots and personal property of various kinds, aside from live-stock. The direct tax to the Territory on the assessed valuation will yield a revenue of \$492,599.63. This, of course, does not represent the entire revenue, as railroad, telegraph, express, and insurance companies pay a tax on their gross earnings. The assessment here given is divided as to the two divisions of the Territory, as represented by what will soon be the States of North Dakota and South Dakota, embracing the principal articles, the totals embracing all the property listed in each county.

The following tables are submitted.

Assessment returns.

NORTH DAKOTA COUNTIES.

Counties.	Acres of land.		Horses.		Mules and asses.	
	Number.	Value.	Number.	Value.	Number.	Value.
Barnes.....	669,011	\$2,353,219.00	4,368	\$199,857.00	308	\$13,812.00
Benson.....	71,814.22	303,205.00	1,072	75,272.00	100	7,405.00
Billings.....	4,252	5,180.00	3,320	83,000.00	.....	.....
Bottineau.....	42,833	148,110.00	1,113	74,123.00	29	2,250.00
Burleigh.....	202,757	963,747.00	2,163	78,624.00	213	7,130.00
Cass.....	957,932	5,333,179.00	12,963	569,298.00	1,825	76,828.00
Cavalier.....	141,347	298,179.00	1,418	90,316.00	109	4,255.00
Dickey.....	390,625	1,428,342.00	3,535	164,298.00	270	11,854.00
Eddy.....	101,827	455,070.00	1,051	80,235.00	61	5,600.00
Emmons.....	102,635	391,449.00	1,479	67,411.00	40	2,220.00
Foster.....	264,120	812,820.00	973	59,715.00	135	8,205.00
Grand Forks.....	721,274	2,846,867.00	8,539	539,792.00	768	44,857.00
Griggs.....	294,703	1,111,576.00	1,666	98,601.00	160	10,173.00
Kidder.....	458,478.50	1,173,157.00	1,028	43,745.00	113	6,250.00
La Moure.....	479,017	1,734,931.00	1,724	59,841.00	235	7,644.00
Logan.....	39,380	158,700.00	107	6,070.00	3	155.00
McHenry.....	32,540	84,645.00	1,219	31,903.00	57	3,640.00
McIntosh.....	173,155	353,860.00	1,307	60,610.00	18	1,045.00
McLean.....	225,532	675,894.00	576	21,688.00	87	4,230.00

Assessment returns—Continued.

NORTH DAKOTA COUNTIES—Continued.

Counties.	Acres of land.		Horses.		Mules and asses.	
	Number.	Value.	Number.	Value.	Number.	Value.
Mercer	17,125	\$29,050.00	221	\$4,485.00	.....	.....
Morton	187,823	569,535.00	2,746	96,354.00	81	\$3,093.00
Nelson	302,124	1,068,000.00	2,286	124,589.00	266	15,043.00
Oliver	15,592	38,980.00	258	11,652.00	9	525.00
Pembina	539,429	1,594,168.00	8,510	464,649.00	262	12,650.00
Pierce	22,896.44	71,895.00	288	20,873.00	.....	.....
Ramsey	240,139	1,010,072.00	2,861	169,438.00	244	11,155.00
Ransom	344,337	1,661,800.00	3,993	131,190.00	164	7,830.00
Richland	655,626.49	2,777,879.00	6,291	318,582.00	675	36,991.00
Rolette	51,617	174,524.00	1,007	61,574.00	33	3,150.00
Sargent	299,398	1,152,633.00	2,881	156,259.00	187	9,410.00
Stark	81,349	229,597.00	1,045	38,756.00	24	1,144.00
Steele	328,360	1,438,921.00	2,754	118,040.00	280	11,945.00
Stutsman	880,872.15	1,839,820.00	1,939	71,410.00	268	10,435.00
Towner	71,699.86	362,670.65	854	61,560.00	264	22,050.00
Traill	478,490.28	2,190,875.00	7,025	300,492.00	1,058	50,465.00
Walsh	559,711	2,516,783.00	9,442	608,369.00	341	22,170.00
Ward	20,904	42,593.00	457	20,111.00	21	1,195.00
Wells	203,621.66	665,250.00	789	41,095.00	108	7,670.00
Total	10,674,347.60	40,061,175.65	105,268	5,223,877.00	8,816	444,474.00

Counties.	Cattle.		Sheep.		Swine.		Total.
	Number.	Value.	Number.	Value.	Number.	Value.	
Barnes	6,748	\$87,353.00	1,314	\$2,616.00	1,937	\$4,682.00	\$3,182,450.00
Benson	2,340	56,620.00	97	196.00	323	1,597.00	577,033.00
Billings	8,360	133,760.00	25	75.00	14	42.00	245,934.00
Bottineau	2,435	66,342.00	129	370.00	435	1,591.00	432,298.00
Burleigh	3,899	58,288.00	1,740	2,679.00	906	3,465.00	2,547,756.00
Cass	13,856	155,968.00	1,743	3,372.00	6,127	16,624.00	10,134,880.00
Cavalier	3,949	69,645.00	415	613.00	1,260	2,886.00	708,871.00
Dickey	5,476	81,513.00	1,359	1,444.00	886	2,576.00	2,079,310.00
Eddy	2,416	40,025.00	30	80.00	357	1,735.00	689,031.00
Emmons	3,373	64,102.00	4,491	8,121.00	535	1,948.00	568,300.50
Foster	1,559	28,310.00	600	1,155.00	243	1,190.00	1,039,125.00
Grand Forks	9,589	155,934.00	1,581	2,850.00	4,329	13,145.00	6,209,547.00
Griggs	4,557	76,245.00	451	1,308.00	845	2,898.00	1,576,592.00
Kidder	1,527	25,343.00	3,903	5,776.50	225	888.95	1,423,971.55
La Moure	3,878	19,113.00	672	646.00	628	946.00	2,116,105.00
Logan	318	6,894.00	21	42.00	49	130.00	208,859.00
McHenry	6,470	98,940.00	1,141	2,283.00	295	1,002.00	300,770.00
McIntosh	3,265	68,205.00	382	650.00	900	1,731.00	552,446.00
McLean	1,191	16,179.00	104	218.00	406	1,004.00	768,029.00
Mercer	795	12,104.25	335	585.35	221	270.25	67,461.10
Morton	7,977	119,680.00	3,647	8,148.00	1,104	3,327.00	1,561,418.00
Nelson	5,468	82,587.00	928	1,815.00	1,137	3,578.00	1,538,246.00
Oliver	896	13,628.00	1,678	3,044.50	137	505.00	77,693.50
Pembina	9,419	122,137.00	2,719	5,391.00	4,064	8,156.00	2,902,199.00
Pierce	1,257	25,140.00	25	51.00	68	353.00	171,834.00
Ramsey	4,652	78,108.00	250	567.00	815	3,775.00	1,974,371.00
Ransom	5,153	64,206.00	1,137	2,057.00	919	1,417.00	2,325,200.00
Richland	11,464	127,072.00	2,270	6,918.00	3,747	11,315.00	4,142,865.00
Rolette	2,227	57,856.00	214	608.00	439	1,697.00	476,677.00
Sargent	5,217	87,358.00	558	902.00	1,647	3,205.00	1,739,359.00
Stark	3,314	54,313.00	997	1,495.00	403	1,910.00	573,938.00
Steele	4,198	57,360.00	666	1,479.00	1,338	2,758.00	1,800,813.00
Stutsman	4,540	43,980.00	3,095	3,673.00	388	1,032.00	2,765,346.00
Towne	1,114	32,131.00	21	42.00	417	1,014.00	588,274.65
Traill	8,380	74,798.00	1,652	1,747.00	3,311	5,868.00	3,428,549.00
Walsh	10,799	135,397.00	1,199	2,403.00	4,994	10,058.00	4,315,247.00
Ward	1,906	32,779.00	1,352	2,579.00	282	1,025.00	221,727.00
Wells	1,518	28,540.00	703	760.00	297	1,110.00	824,910.00
Total	175,500	2,557,953.25	43,644	78,759.35	46,428	122,454.20	66,857,436.30

Assessment returns—Continued.

SOUTH DAKOTA COUNTIES.

Counties.	Acres of land.		Horses.		Mules and asses.	
	Number.	Value.	Number.	Value.	Number.	Value.
Aurora	293,323	\$971,748.00	3,595	\$100,186.00	193	\$7,023.00
Beadle	535,438	2,738,262.00	5,758	263,037.00	393	19,805.00
Bon Homme	314,789	1,478,843.00	5,018	181,640.00	110	4,710.00
Brookings	368,139	1,428,559.00	5,944	223,545.00	214	7,977.00
Brown	750,201	3,898,043.00	12,101	695,104.00	.....	.....
Brulé	255,273	723,014.00	4,451	128,529.00	185	5,488.00
Buffalo	54,369.71	154,065.00	595	20,657.00	46	2,020.00
Butte	49,424	126,757.00	2,571	77,130.00	44	1,805.00
Campbell	94,200	221,309.50	498	83,089.00	27	1,945.00
Charles Mix	160,743	403,273.00	3,006	115,508.00	179	7,465.00
Clark	323,968	1,108,192.00	4,371	188,559.00	97	8,925.00
Clay	226,040	1,543,525.00	4,690	163,882.00	198	8,080.00
Codington	266,947	1,305,000.00	3,741	161,868.00	123	5,135.00
Custer	41,977	106,799.00	4,068	162,104.00	129	6,610.00
Davison	183,958	751,332.00	3,013	94,459.00	84	2,830.00
Day	266,054	756,114.00	4,761	196,590.00	170	6,835.00
Deuel	290,323	845,196.00	2,537	80,466.00	62	2,065.00
Douglas	174,246	718,930.00	2,542	102,846.00	168	7,777.00
Edmunds	307,236	938,373.00	2,598	113,285.00	143	5,805.00
Fall River	21,509	110,102.00	2,364	90,638.00	479	27,434.00
Faulk	279,645	1,145,037.00	2,558	74,316.00	160	4,591.00
Grant	260,655	753,995.00	3,443	108,623.00	57	1,800.00
Hamlin	201,975	682,761.00	2,762	81,524.00	87	2,480.00
Hand	507,263	1,228,470.00	3,269	97,064.00	392	10,686.00
Hanson	184,823	818,171.00	3,126	89,559.00	113	3,422.00
Hughes	212,060	736,029.00	1,885	37,446.00	49	1,164.00
Hutchinson	404,674	1,811,792.00	6,711	242,002.00	84	3,463.00
Hyde	265,603	689,191.00	1,088	26,494.00	86	2,221.00
Jerauld	196,967	501,918.00	2,642	84,343.00	160	5,895.00
Kingsbury	334,259	1,373,145.00	5,835	252,667.00	201	8,731.00
Lake	228,907	1,215,021.00	3,942	236,353.00	135	6,596.00
Lawrence	100,130.70	310,665.00	3,113	136,948.00	270	14,090.00
Lincoln	315,633	2,070,218.00	5,503	226,441.00	141	6,910.00
Meade	140,526.47	386,010.00	4,828	160,460.00	196	8,520.00
McCook	250,524	982,730.00	4,038	101,400.00	137	3,746.00
McPherson	171,961.88	515,812.00	2,187	118,269.00	46	2,280.00
Marshall	175,789	519,064.00	2,970	120,184.00	196	8,365.00
Miner	211,634	817,583.00	3,641	133,521.00	123	4,655.00
Minnehaha	413,791	2,945,421.00	7,665	381,299.00	311	15,250.00
Moody	247,544	1,375,720.00	4,192	207,869.00	78	2,865.00
Pennington	99,049	619,756.00	3,749	140,351.00	131	5,820.00
Potter	195,620	544,998.00	1,580	66,707.00	121	5,675.00
Roberts	116,474	344,945.00	1,167	32,263.00	21	662.00
Sanborn	230,267	785,834.00	3,165	101,831.00	135	4,720.00
Spink	671,960	2,345,870.00	8,696	394,250.00	406	18,453.00
Sully	312,840	974,890.00	1,805	56,870.00	156	5,420.00
Turner	311,819	1,279,460.00	5,180	160,355.00	103	4,000.00
Union	245,590	1,510,037.00	6,354	240,880.00	192	8,575.00
Walworth	112,512	340,325.00	957	63,895.00	57	3,447.00
Yankton	291,396.14	1,520,254.00	5,284	214,522.00	101	5,375.00
Total	12,610,049.90	51,475,558.50	191,557	7,631,228.00	7,489	319,611.00
Total, Dakota	23,284,397.50	91,536,734.15	296,825	12,855,105.00	16,305	764,085.00

Assessment returns—Continued.

SOUTH DAKOTA COUNTIES—Continued.

Counties.	Cattle.		Sheep.		Swine.		Total.
	Number.	Value.	Number.	Value.	Number.	Value.	
Aurora.....	7,066	\$60,377.00	1,420	\$1,432.00	6,355	\$14,657.00	\$1,424,753.00
Beadle.....	10,850	131,528.00	5,141	7,934.00	5,035	15,358.00	5,000,062.00
Bon Homme.....	10,514	122,948.00	4,285	3,454.00	10,617	27,387.00	2,356,258.00
Brookings.....	12,729	123,948.00	4,581	5,075.00	2,422	4,185.00	2,428,872.00
Brown.....	11,593	188,550.00	2,020	2,433.00	4,355	15,640.00	7,899,356.00
Brulé.....	9,886	93,580.00	1,098	1,187.00	5,150	11,549.00	1,345,310.00
Buffalo.....	1,602	17,424.50	169	169.00	720	2,490.50	214,817.00
Butte.....	8,300	116,200.00	2,370	2,370.00	293	1,360.00	375,759.00
Campbell.....	3,114	62,405.00	637	1,643.00	714	2,387.00	449,127.50
Charles Mix.....	6,808	74,835.00	914	1,266.00	6,956	16,666.00	718,176.00
Clark.....	7,699	106,237.00	5,436	9,176.00	1,926	5,299.00	1,805,879.00
Clay.....	18,208	91,883.00	840	840.00	12,722	27,383.00	2,061,703.00
Codington.....	5,656	58,103.00	1,473	1,534.00	1,454	3,160.00	2,759,058.00
Custer.....	10,243	152,776.00	2,884	4,379.00	942	4,508.00	684,328.00
Davison.....	5,649	52,920.00	794	793.00	4,646	8,192.00	1,703,133.00
Day.....	10,479	109,746.00	2,693	3,258.60	1,882	3,439.00	1,301,072.00
Deuel.....	6,943	57,350.00	6,562	6,788.00	822	1,503.00	1,126,617.00
Douglas.....	5,189	63,078.00	818	847.00	5,673	13,285.00	1,086,354.00
Edmunds.....	4,384	61,401.00	1,173	1,302.00	998	3,006.00	1,430,413.00
Fall River.....	14,252	216,936.00	1,829	2,253.00	598	3,292.00	621,153.00
Faulk.....	4,243	44,433.00	2,656	2,588.00	1,515	3,991.50	1,522,776.50
Grant.....	7,165	64,295.00	1,536	1,708.00	1,353	2,533.00	1,354,325.00
Hamlin.....	6,063	48,883.00	921	1,081.00	1,231	2,657.00	998,418.00
Hand.....	9,730	76,804.00	5,028	4,794.00	5,775	6,239.00	1,868,023.00
Hanson.....	6,334	54,222.00	5,088	3,671.00	5,109	6,323.00	1,217,871.00
Hughes.....	5,572	52,139.00	1,958	1,506.00	752	1,808.00	1,946,256.00
Hutchinson.....	18,374	177,131.00	11,742	16,206.00	16,870	38,896.50	2,660,434.00
Hyde.....	1,946	25,216.00	317	157.00	728	1,189.00	848,120.00
Jerauld.....	6,009	60,345.00	2,041	2,232.00	3,440	8,479.00	757,512.00
Kingsbury.....	10,549	101,645.00	1,380	1,388.00	2,573	5,011.00	2,298,895.00
Lake.....	9,780	98,581.00	2,214	3,565.00	2,115	5,366.00	2,390,002.00
Lawrence.....	4,854	79,187.00	1,786	2,828.00	447	1,838.00	3,499,038.00
Lincoln.....	18,192	136,061.00	2,453	2,463.00	13,217	27,599.00	2,898,527.00
Meade.....	12,289	193,810.00	5,445	7,486.00	1,016	5,017.00	1,087,595.00
McCook.....	9,385	68,412.00	1,004	913.00	6,469	7,799.00	1,556,689.00
McPherson.....	5,287	87,536.00	617	1,019.50	1,274	2,655.10	925,327.60
Marshall.....	3,750	45,992.00	148	131.00	778	2,280.00	1,000,708.00
Miner.....	7,705	85,503.00	1,342	1,484.00	2,774	6,395.00	1,313,237.00
Minnehaha.....	21,953	212,085.00	5,664	8,857.00	11,174	30,642.00	10,308,606.00
Moody.....	9,978	100,677.00	2,875	4,164.00	2,175	6,791.00	2,101,115.00
Pennington.....	9,338	161,694.00	4,402	8,761.00	765	3,453.00	2,349,447.00
Potter.....	2,623	54,879.00	1,497	1,507.00	619	1,647.00	835,950.00
Roberts.....	2,355	23,513.00	922	922.00	324	729.00	458,668.00
Sanborn.....	7,679	50,446.00	1,896	1,534.00	4,230	8,162.00	1,265,553.00
Spink.....	12,687	145,067.00	9,634	12,340.00	4,856	11,917.00	3,808,408.00
Sully.....	4,417	44,778.00	2,839	1,997.00	414	1,073.00	1,135,997.00
Turner.....	17,733	126,470.00	5,128	4,805.00	12,763	29,565.00	2,033,280.00
Union.....	19,653	177,790.00	440	440.00	12,772	32,147.00	2,217,404.00
Walworth.....	2,715	56,803.00	990	1,742.00	3,888	2,084.00	543,803.00
Yankton.....	18,712	117,996.00	3,723	3,753.00	13,468	35,085.00	3,453,255.00
Total.....	448,234	4,734,618.50	134,823	164,175.50	209,194	484,117.60	97,342,440.60
Total, Dakota.	623,734	7,292,571.75	178,467	242,934.85	255,622	606,571.80	164,199,876.90

Comparative table.

Items.	1888.	1889.	Items.	1888.	1889.
Total assessment	\$161,420,974.32	\$164,199,876.90	Value of cattle ..	\$7,634,548.94	\$7,292,571.75
Acres of land	23,832,816.85	23,284,397.50	Average value ..	\$12.77	\$11.69
Value of land	\$91,875,729.84	\$91,536,734.15	Number of sheep.	152,396.00	178,467.00
Average value			Value of sheep..	\$207,790.98	\$242,934.85
per acre.....	\$3.85	\$3.93	Average value ..	\$1.36	\$1.36
Value of town			Number of swine	174,028.00	255,622.00
lots	\$26,125,555.80	\$28,530,279.00	Value of swine..	\$446,811.30	\$606,571.80
Value of merchan-			Average value ..	\$2.57	\$2.37
dise	\$6,571,007.00	\$6,239,113.00	Value of ve-		
Capital in manu-			hicles	\$2,250,964.25	\$2,153,866.60
factures.....	\$893,850.00	\$786,276.00	Moneys and		
Number of horses	268,410.00	296,825.00	credits	\$2,227,115.00	\$2,494,617.75
Value of horses ..	\$12,120,346.58	\$12,855,105.00	Household fur-		
Average value ...	\$45.16	\$43.31	niture.....	\$368,636.60	\$285,501.00
Number of mules.	16,057.00	16,305.00	Stocks and		
Value of mules...	\$822,772.09	\$764,085.00	shares.....	\$2,837,930.93	\$2,688,254.00
Average value ...	\$51.24	\$46.86	All other prop-		
Number of cattle.	597,808.00	623,734.00	erty.....	\$7,037,915.01	\$7,723,967.00

An analysis of the foregoing tables would seem to indicate that the land bears the great burden of taxation, and that personal property, other than live stock, does not bear its just proportion. Assessors usually find their greatest difficulty in arriving at the value and of getting personal property properly listed, hence the inequality of the burden. This is wrong, but at present there seems no sure remedy. The history of one year ought to be a lesson for succeeding years, but unfortunately it is not. There can be no doubt that more money is invested in merchandise this year than last, and yet we find that the assessment has fallen off nearly \$350,000. There is a failing also in the assessment of household furniture, vehicles, and stocks and shares, and yet there must have been an increase in all these items. It is evident that there has been a lack of vigilance on the part of some assessors. It is hoped that hereafter a better system will be adopted and more care taken in the details.

On the whole, the showing made by the assessment of 1889 is a favorable one, and shows beyond doubt that Dakota has made progress. It shows that the number of each class of live stock has increased, which is one of the very best evidences of growth and prosperity in an agricultural State.

Trusting that the information contained in this circular may be beneficial as well as interesting, I have the honor to subscribe myself,

J. C. McMANIMA,
Territorial Auditor.

Gov. A. C. MELLETTE.

MILITIA.

The Territory of Dakota has a well organized and equipped militia supported by salutary laws. The following report of the adjutant general, furnishes a correct idea of its efficiency:

ADJUTANT-GENERAL'S OFFICE,
Redfield, Dak., October 23, 1889.

SIR: I have the honor to submit the following report of the militia of the Territory:

At the commencement of the present fiscal year the organization of the militia was practically the same as at the date of the last report of the adjutant-general, on September 30, 1888, consisting of—

The commander-in-chief and staff	27
Two colonels and staff officers	25
One major and staff	7
Two regiments of infantry, 9 companies each	789
One battalion of cavalry	87
One battery of artillery	51
Total	986

In consideration of the purposed division of the Territory, a reorganization of the guard has placed all the companies belonging to the southern part of the Territory

in the Second Regiment, and those of the northern part in the First Regiment, to which was attached Battery A and the battalion of cavalry.

On the 16th of May a company of infantry was mustered into the service at Cas-
selton and assigned to the first regiment.

The present organization of the guard consists of the commander-in-chief and
staff..... 19

First regiment:

Col. William A. Bentley and staff.....	12
Seven companies of infantry	280
Battery A.....	40
Troops A and B.....	88
Regimental band	20

Total.....	440
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Second regiment:

Col. Mark W. Sheafe and staff.....	13
Twelve companies of infantry.....	480
Regimental band	20

Total.....	513
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Grand total.....	972
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ORDNANCE.

The guard is armed with 950 Springfield rifles, .45 caliber, model 1884, and two
3-inch muzzle-loading rifles, model 1861, distributed amongst the troops as follows:

First Regiment:

Seven companies infantry, 40 guns each	280
Two troops cavalry	100
Battery A, two 3-inch guns and 10 Springfield rifles.....	10

390

Stored at Bismarck	80
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470

Second Regiment:

Twelve companies infantry, 40 guns each.....	480
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Total.....	950
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There are also 50 cadet rifles in the possession of the agricultural college at Brook-
ings.

Tactics and uniform are in accordance with the United States regulations, and, in
addition to the annual muster and inspection, the guard is required to perform at
least eleven drills and musters during the year.

The members of the guard are enlisted for three years; provided, however, after
having served one term, they may re-enlist for one or more years.

ENCAMPMENT.

No encampment was held in 1888, the appropriation of \$18,000 being inadequate to
the discharge of necessary expenses.

From June 25 to July 2 of the present year an encampment was held at "Camp Ben.
Harrison," near Watertown, at which all the organizations of the guard were pres-
ent except the battalion of cavalry, which was excused on account of the great dis-
tance to be traveled and consequent heavy expense for transportation.

At the encampment there were present for duty 75 commissioned officers and 578
enlisted men.

The troops were especially instructed in guard mounting and guard duty, and com-
pany and battalion drills were had on every day, Sunday excepted.

On the 27th the troops were drilled in brigade movements by Col. E. F. Townsend,
of the Twelfth U. S. Infantry, who had been detailed to inspect the D. N. G., which
duty was performed on the 29th in a very thorough manner.

COST OF ENCAMPMENT.

The amount of subsistence for camp was.....	\$1,167.81
Commutation of rations on the way.....	620.80
Amount paid for horse hire.....	284.25
Per diem of guard.....	5,607.62
Transportation and freight.....	2,645.98
Sundry other expenses.....	591.75
Total cost of encampment.....	10,918.27
One half year's armory rent paid.....	3,472.50
Sundry other expenses to date.....	147.50
Total amount drawn on the military fund.....	14,538.27

which, deducted from \$18,000, appropriated, will leave a balance of \$3,461.73 to meet the expenses of inspecting fourteen of the organizations, and to be applied on the clothing allowance for the present year, about one-half of which can probably be paid.

A division of ordnance and ordnance stores has been effected in accordance with the provisions made by the military committee appointed for that purpose, and requisitions have been sent in to the General Government for amount of the appropriation to the Territory for 1889, the requisitions specifying the ordnance and stores required by the militia in each of the two divisions of the Territory to which they are ordered shipped, the apportionment having been made by the Secretary of War.

I am, sir, very respectfully, yours,

J. S. HUSTON,
Adjutant-General.

Hon. A. C. MELLETTE,
Governor and Commander-in-Chief.

DAKOTA PENITENTIARY.

SIoux FALLS, *October 23, 1889.*

SIR: The transactions of this penitentiary for the year ending June 30, 1889, are as follows:

Number of inmates June 30, 1888.....	92
Number received since and up to June 30, 1889.....	36
	128
Released by expiration of sentence.....	36
Released by commutation of sentence.....	3
Released by pardon.....	1
Removed to insane asylum.....	1
Died.....	2
	43
Number confined June 30, 1889.....	85
Total number received since the opening of the penitentiary.....	361
Total number released since the opening of the penitentiary.....	276
Total amount expended for maintenance for year ending June 30, 1889....	\$10,070.30
Amount expended in improvements.....	8,679.87

Improvements consist of water tower in process of erection, steam fitting, and general repairs.

The health of the inmates for the year covered by this report was exceptionally good. No serious sickness among the prisoners existed except in the cases where death ensued, both being consumptive at the time of their reception.

My term of office as warden began June 1, 1889, which precludes further report than as above given.

Very respectfully, your obedient servant,

THEO. D. KANOUSE,
Warden.

Hon. ARTHUR C. MELLETTE,
Bismarck, Dakota.

DAKOTA REFORM SCHOOL.

This institution is located at Plankinton, Aurora County, upon a tract of 80 acres of land, donated. It consists of a three-story building made of Sioux Falls stone, and necessary out-buildings to equip a farm.

Boys and girls are received on equal terms and treated alike. The government of the school partakes more of the nature of a well-regulated home than that of a penal institution. The first child was received on the 3d day of November, 1888, and now it has 33—24 boys and 9 girls. All children are committed to the care of the institution during minority or until sooner reformed and released by the board of control. Pupils attend school about three hours each week day and are quite thoroughly drilled in the common branches, music, and general information.

A Sunday school has been organized and is regularly maintained. Religious services are held at the institution each Sabbath afternoon, the clergy of the surrounding country conducting the same. The manual labor for the boys consists of farm and garden work, care of stock, and such mechanical industries as its needs demand. The girls are instructed in house-work, such as cooking, dining-room and chamber work, sewing, knitting, and fine needle-work.

The greatest care is given to the correction of the habits of the youthful inmates, and the management of the institution, under Mr. C. W. Ainsworth and his excellent wife, both of much experience in the reform work, is very satisfactory.

DAKOTA HOSPITAL FOR THE INSANE.

YANKTON, SOUTH DAK., *October 28, 1889.*

SIR: In accordance with your request of the 20th instant, I have the honor to make the following report:

Dakota Hospital for the Insane was established by act of legislature, approved February 15, 1879, and is located on section 36, township 94 north, of range 56 west, in Yankton County, $2\frac{1}{2}$ miles from the city of Yankton. The land belonging to said institution embraces all of said section 36. Two hundred acres are under cultivation; the remainder is used for pasture, lawn, park, and flower-garden.

During the year an artesian well has been completed, at a cost of \$2,800. This well supplies an abundance of water for the building and for irrigating purposes; also supplies water for an artificial lake, 80 by 100 feet, with a depth of 7 feet.

The hospital building is a brick structure, three stories high, consisting of a center building 54 by 70 feet; two wings, 36 by 126 feet, facing north and south; two additional wings, 37 by 121 feet, facing east and west, with corridor, dining-room, and hall, 26 by 72 feet; kitchen, laundry, and chapel, 32 by 64 feet, 20 feet above basement; boiler-house, 22 by 46 feet; corridor, 10 by 48 feet, 20 feet high. The building will, with recent additions, accommodate 360 patients.

Outbuildings, consisting of a barn 40 by 60 feet, 18 feet above basement; also frame carpenter-shop, tool-house, sheds, etc.

The above buildings have been erected and furnished at a cost of \$168,800.

The number of patients on hand July 1, 1888 (98 male and 66 female).....	164
Patients received in year ending June 30, 1889 (72 male and 44 female)	116
Patients discharged (30 male, 14 female).....	44
Patients home on trial (9 male, 8 female).....	17
Patients died (8 male, 2 female)	10
Number of patients in building June 30, 1889.....	209

Respectfully,

H. F. LIVINGSTONE, M. D.,
Superintendent.

Hon. A. C. MELLETTE,
Governor, Bismarck, North Dakota.

NORTH DAKOTA HOSPITAL FOR INSANE.

NORTH DAKOTA HOSPITAL FOR INSANE,
Jamestown, North Dak., October 29, 1889.

SIR: In reply to your request of recent date, I take pleasure in presenting to you the following facts and suggestions relative to the workings of the North Dakota Hospital for Insane for the current year:

In this connection I am constrained to suggest that the people of our proud young State, as it is about to enter into full statehood, owe to the legislatures of the Territory of the past, and to Territorial governors, as well as to the intelligent forethought of a number of painstaking citizens, a debt of gratitude for successful efforts in establishing for the Territory a public and very necessary institution that will surely prove a credit to the hopeful and energetic State, now born into the great union of States and now a member in full and good standing of a grand Government so justly celebrated for its magnanimity in providing for the care of its unfortunates, and its benefactors.

In reference to the condition of our hospital for the year 1889 up to the present time, and in reference to its present needs as well as recent improvements, I take pleasure in presenting to your excellency the following:

Since my last report we have opened and are now occupying two new ward buildings, viz, wards Nos. 2 east and west, being for male and female patients, respectively. These needed additions, together with an addition to the office building, give ample room for present requirements. We are also now occupying the amusement hall, which has already proven a great benefit to patients in giving them an opportunity to witness and participate in healthful recreation and amusement, thus aiding and cheering them and stimulating their minds.

The building formerly occupied as boiler-house has been remodeled and is now used as a kitchen, store-room, laundry, mending room, together with a dining-room for employes, and is for these uses complete, convenient, and comfortable.

The institution throughout is now connected by a system of corridors or partly underground hall-ways. This completed system I find most useful and convenient as well as pleasant and desirable for patients, and while it does not detract from the original idea of the cottage plan, this corridor communication with all buildings I believe most beneficial and desirable. Especially in cold or disagreeable weather are its benefits discernible in permitting patients and attendants to pass from building to building under cover and protection as well as in perfect safety and security.

While the Territory and its legislature have been in the past generous and prompt in complying with former requests, and while our system is now very near complete, we do not find any more room than is needed, and while it may not be found necessary to ask for additional room for some time to come, it would seem desirable to have a fund to use in placing all our present buildings in such condition that "every nook and corner" may be put to practical use. Taking this view of the matter, and believing that your excellency and the people of the State prefer to see everything in and about the institution comfortably arranged, and in complete accordance with, and in harmony with the original design and ideas of the governor and legislature in securing the additional buildings and adjuncts, I would respectfully but earnestly suggest the need of a small appropriation for fully completing our present plans and securing all the benefits intended to be derived from the additions and improvements. A small appropriation will insure additional quarters for employes who now occupy portions of ward buildings that should be devoted to the use of patients.

It is with a feeling of thankfulness and gratification that I am permitted to report that the physical health of patients is at a high standard, and as nearly perfect as could be expected.

I attribute this desirable condition to the perfection of our system of sewerage, to the excellent ventilation of all rooms and departments, as well as to the opportunities now afforded of giving patients exercise, amusement, and recreative employment for mind and body; as in all diseases good ventilation, exercise, and various means of deviation from morbid thoughts forced upon the patient when left alone to "commune with his own thoughts," these essentials are still more to be desired and of even more importance where the mind is diseased and the mental faculties clouded, uncertain, and morose.

In carrying on this important, painstaking, and humanitarian work, I am fully convinced that it is better and safer to err upon the side of over-doing rather than on that of under-doing in preparing for the care and attention of our unfortunates, and I therefore feel no hesitancy in expressing the belief that the last legislature seriously erred in withholding the necessary appropriation for the sufficient payment of employes, as well as failing to make it possible to retain a sufficient number of competent attendants. As a result of this apparent oversight on the part of the legislature, the trustees and management found it necessary to dismiss employes badly needed, and

prevented them in many instances from securing the services of those fully competent for the arduous duties and labors of an attendant to the insane. The positions are very trying, as well as most responsible ones, and the ends sought and desired in a hospital of this character certainly suggest and justify a most careful consideration by our legislators when the question of proper funds to properly maintain the work is brought to their attention and for their consideration.

It is a grave mistake to believe that those possessing suitable qualifications to render them valuable as attendants can be secured for inferior compensation. The result in consequence is that we find it very difficult to secure the needed talent in this direction or in retaining it even when secured.

These things I believe to be serious and worthy of the most thoughtful consideration by all who have the success of our institution fully at heart.

The last legislature even saw fit to cut off a desired small appropriation we asked to be used in needed repairs, made necessary from time to time, which I consider most unfortunate, as must be readily realized by all who stop to consider that the best and most substantial buildings, public or private, stand in need of occasional repair, and to fail to arrange for this is false economy that time will make painfully apparent. It will prove an expensive piece of economy if not remedied. By the failure to secure this appropriation we have also been compelled to do without furniture and furnishings badly needed, and in other ways has it hampered the work in our institution.

In a hospital where patients of all degrees of mental derangement are cared for, many being so violent as to at times require the constant attention of one or more attendants, it becomes a serious detriment and drawback to be left with a deficient amount of help.

I believe it is the duty, as it should be the pleasure, of the State to do all in its power to make these unfortunate citizens, bereft of reason and the power of taking care of themselves, comfortable by providing for them a sufficient number of attendants and all needful comforts. The public naturally expects the best results in the hospital, and to that end should employ the means necessary to accomplish the best results possible.

The great need of more and still better attendants in this institution is constantly made apparent.

There were in this institution at our last annual report to the governor 178. Since then 91 have been received, 19 have died, and 64 discharged, leaving 186 in the hospital at this date.

Owing to the fact that our institution is young, the expense per capita of caring for the patients is of course larger than were we older and had 1,000 patients or more, instead of less than 200, as preparations, etc., must oftentimes be as painstaking and exacting for a small number as a large number.

The hospital farm operations on our section of land have been carried on the past year in a manner similar to that of a year ago.

Some 300 acres have been used for pasturage for the cows and cattle used on the farm, and about 250 acres have been used in raising oats and hay for our stock and for vegetables for household use. The garden is under the care of an experienced foreman, who is ably assisted by patients who are allowed to work when they prefer to do so, and a sufficient quantity of vegetables have been stored away for all hospital use. Taking into consideration the small expense incurred in growing our crops, I regard our farming feature a most profitable enterprise and a most desirable means of employing the hands and minds of patients who prefer to work, and who are constantly benefited by being given this opportunity.

The electric-light plant used in lighting the entire institution is now complete and in perfect working order, and works without the least interruption. For safety, economy, and convenience electricity is certainly superior to any other means of illuminating an institution of this kind.

The system of steam-heating and plumbing is now as complete as could be desired, and secures at once safety and comfort throughout the institution, notwithstanding the cutting down of the number of the employés by the failure of the legislature to pass the needed appropriation. I congratulate the trustees and the State generally on the fact that I have been able to retain and secure some most faithful and deserving employés, who have performed extra service most willingly, although knowing they would receive no extra compensation. This faithfulness would seem to suggest the highest appreciation by the management and State, and the fact that the laborer is at all times worthy of his hire. I heartily commend the faithfulness of such employés, and urge the importance of recognizing their effort.

All of which is most respectfully submitted.

O. W. ARCHIBALD,
Superintendent.

HON. A. MELLETT,
Governor Dakota Territory, Bismarck, Dak.

VETERINARY SURGEON'S OFFICE,
Mitchell, Dak., October 25, 1889.

SIR: In answer to your request for summary of business of this office for year ending June 30, 1889, will say that I can only report since assuming duties of office on June 3 last.

I find the demands of the office keep me constantly employed, and occasionally the assistance of my deputies, Dr. W. C. Langdon, of Fargo; D. A. McCommack, of Watertown; J. A. Shorb, of Sioux Falls, is required.

The principal part of the work consists in investigations of reported cases of glanders, a great majority of which prove to be some trifling ailment. This disease is being stamped out, though there is yet a lingering trace of it throughout the Territory. Since June 6 last I have caused to be destroyed ninety-six horses. All diseases are less virulent in the high and bracing atmosphere of Dakota than in a warm, close, and moist atmosphere.

I have found the disease "crotalin" in the Black Hills creating consternation among stock-men. It is caused by eating the plant "*Crotalaria sagittalis*," or "rattle box." Animals become ravenously fond of the plant, and the only safety is to remove them from its vicinity.

There has existed among cattle in a few localities a mild form of "epizootic catarrhal fever," which under poor sanitary conditions has caused some loss.

We have had very few outbreaks of disease among our herds of cattle. Early in the summer Texas fever was reported to exist in the States south of us. Nebraska issued quarantine, Iowa was already protected by standing law, Montana felt safe, and at your request I investigated as to the danger of our Territory being invaded by cattle having this disease. I became convinced that we stood in no danger, and deemed it unnecessary to go to the expense of quarantining against it. I so advised you at the time and I am pleased to state that my opinion was correct, as it is now past the time of year when we can be considered to be in any danger from exposure to these Southern cattle, as "Jack Frost" proves destructive to the germ of this disease.

The variety of anthrax called "black leg" made its appearance in several localities, but no serious loss was sustained. I have thoroughly discussed the subject with a number of our most intelligent farmers and stock-men, and it seems to be the established fact among them that very little, if any, loss ever occurs when the "rowel" or "seaton" is freely used.

The most serious outbreak among our cattle occurred in the vicinity of Yankton, and was called the "Yankton Cattle Disease." I was notified of the losses that were occurring and I immediately repaired to the neighborhood affected. I found that something like one hundred cattle had died of the disease. Inquiry developed many different opinions as to the cause of the disease. It was thought by some to be due to the eating of some plant, others attributed it to the eating of dead grass, and still others ventured the opinion that it resulted from the abundance of "pollen" existing on plants where the cattle were pastured. I found, on looking over the feeding grounds, no reason to believe that any of the above-suspected causes to be the true one. I did find, however, a solution of the question in the most filthy and foul condition of a creek, called the "Rhine," which flows through the city when the water is high, but which at that time was nearly dry and devoid of current. This creek proved to be the receptacle of the drainage from several barn-yards.

At the request of the mayor of the city of Yankton I met the council and board of health that night, and advised them as to the proper preventive measures. I considered the disease to be directly due to such filth as I have previously described. I gave necessary directions; heard no further complaints.

There is also one more disease which I will briefly mention, viz, "actinomykosis" or "big jaw." At the market all cattle are now refused that are so affected. The disease is one that can be transmitted by breeding, and I believe also by close association. The quicker the breeders realize this fact the sooner will they destroy an animal so affected and send it to the rendering-tank for grease.

The total expense of this department, as per accompanying statement, since June 1 last, is \$2,512.45.

Very respectfully submitted,

D. E. COLLINS,
Veterinary Surgeon.

Hon. A. C. MELLETTTE,
Governor Dakota Territory.

TERRITORIAL BOARD OF HEALTH.

SUPERINTENDENT'S OFFICE,
Frankfort, Dak., October 24, 1889.

SIR: I have the honor to submit the following report, according to your request, to
 wi :

During the past year in a few localities diphtheria has prevailed, extending over small districts. Through active measures, and maintaining strict quarantine, the use of disinfectants and germicides and improvement of local sanitary conditions the disease was prevented from spreading.

In a few localities modified small-pox or varioloid occurred, but by proper means it was in every case prevented from spreading. Our population is peculiarly liable to contagious diseases, which are migratory to some extent and constantly re-enforced from the population of the Old World, being borne directly from the ship of passage to our State. In a few cases I have known small-pox to be brought in the clothing or bedding from which infection followed. Means should be taken to enforce vaccination in order to guard against this dread disease, and I shall use the authority of my office to its full extent to this end. At a meeting held May 9, 1889, Dr. D. G. Mead, of Union County, and Dr. A. P. Roundswell, of La Moure County, were appointed to assist the superintendent as an examining board.

Ninety-one licenses were issued by my predecessor during the official year ending June 30, 1889.

I shall insist upon applicants for license who do not hold diplomas from some reputable medical college undergoing a strict examination in every case. Neither will I knowingly grant a license to any man or woman to practice medicine without evidence of good moral character. The health laws should be so amended as to make it practically possible to suppress all irregular, incompetent, or immoral persons now in the practice of medicine and drive them from the State.

Very respectfully,

WILLIAM M. KAULL, M. D.,
Superintendent.

Hon. A. C. MELLETTE,
Governor of Dakota Territory.

PUBLIC EXAMINER'S OFFICE.

MITCHELL, DAK., *October, 28, 1889.*

DEAR SIR: I have the honor to submit a brief report of the workings of the public examiner's law in my district from the 18th day of April, 1889 up to the present time. The law creating this office authorized and empowered the public examiner to exercise constant supervision over the books and financial accounts of the several educational, charitable, penal, and reformatory institutions of Dakota; to order and enforce a correct and, as far as practicable, uniform system of book-keeping by county treasurers and auditors; to examine their accounts, and to instruct Territorial and county officers in the proper mode of keeping their accounts, as well as to examine the official bonds of both Territorial and county officers in their districts; also, to visit and inspect each of the banking, insurance, saving, annuity, safe deposit, loan, or trust companies, and other moneyed corporations created under the laws of this Territory.

It will be readily seen that to comply with this law and make it effective a vast amount of work must be done.

In starting out to discharge the duties of this office it was my purpose to visit personally every institution, county, and corporation mentioned in said law, and I hope to be able to do so before the end of the year and to report upon their condition so far as the public is interested in the same.

The law has already been of great benefit, particularly in its application to county work, and may be made of greater value by judicious revision of the revenue laws so that more simple methods may be adopted by the county officers. In this department, however, there is a marked improvement over last year. The law with regard to banks and banking was not carried into effect prior to this year. Its practical application is received with hearty approval by all bankers of good standing, and they have, without exception, submitted to an examination without protest. I believe this feature of the law, if properly followed up, will prove of great benefit to the public. With regard to the public institutions of the Territory, I find that there has not existed heretofore in all cases a close adherence to strict business principles in financial affairs, but there has been a change for the better under the present management.

I have endeavored, so far as possible, to adopt and enforce a uniform system of book-keeping and accounting, and have met with reasonable success, considering the

unsatisfactory condition of the existing laws. The law requiring the public examiner to investigate county officers' bonds has resulted in much good. I have found more carelessness with regard to this important matter than in any other branch of county business.

Very respectfully submitted.

T. E. BLANCHARD,
Public Examiner, First District, Dakota.

Hon. A. C. MELLETTE,
Governor, Dakota.

INDIAN STATISTICS.

There is nothing to fear from the Indian population of Dakota. A few are farmers, and the rest are more or less accustomed to white man's labor, for which a large majority, however, have as yet a sovereign contempt. They are peaceably disposed toward their white neighbors, and as but little is seen of them anyway their presence in the Territory on the Government reservations is hardly observed, and of no concern to the people of Dakota generally.

The total Indian reservation area is 26,751,105 acres, or 41,799 square miles, the Sioux Reservation alone containing 21,593,129 acres, or 33,793 square miles.

The total population in 1886 was 32,500, of which number over 16,000 wear citizens' dress wholly, and 9,000 have partially adopted the white man's attire, leaving about 7,000 who retain their native dress.

The number of males engaged in manual labor is 7,000; of families at work on farms, 4,800, and in other civilized pursuits, 1,000. The Indians own about 20,000 horses, 17,000 head of cattle, 1,200 swine, and 200 mules.

There were 20,000 acres under cultivation in 1886 by Indians, who raised 70,000 bushels of corn and 50,000 bushels of wheat.

The number of Indians who can read was reported at 2,750, and of those who can speak English 8,600. Out of a school population of about 7,000 the greatest attendance was 2,129, and the average attendance 1,293.

There are 24 schools in operation and 34 buildings used. The cost of maintaining these schools for one year was \$101,402, of which amount \$18,639 was contributed by religious societies, and \$82,763 came from the Government. The average annual cost of maintenance for the average school attendance was \$76 per capita; for the greatest school attendance, \$47 per capita; for the entire population, \$15 per capita, and for each school in operation, \$4,225. It can not be disputed that the Indians of Dakota are gradually being brought within the influences which, it is trusted, will eventually prevail with the entire Indian race in this country.

UNITED STATES INDIAN SERVICE,
Cheyenne River Agency, October 25, 1889.

SIR: In reply to your letter of recent date, I have the honor to state that I have under my charge at this agency about 2,900 Sioux Indians. They are peaceably inclined towards the whites and seldom quarrel among themselves.

They are making rapid progress in agricultural pursuits.

There are two good boarding and eight day schools, so all can avail themselves of the advantage for an education; most of them are sending their children to school.

I am repairing their houses as fast as I can with the agency mechanics.

The efforts put forth by the churches and schools have greatly improved this people in their habits and morals.

I am, sir, very respectfully, your obedient servant,

CHAS. E. MCCHESENEY,
U. S. Indian Agent.

A. C. MELLETTE,
Bismarck, Dak.

UNITED STATES INDIAN SERVICE,
Pine Ridge Agency, October 25, 1889.

SIR: In reply to your letter of the 21st instant asking information relative to the condition of the Indians at this agency, I have the honor to submit the following:

There are now at this agency 4,549 Sioux, 557 Cheyennes, and 503 mixed bloods, making a total of 5,609.

These Indians are peaceably inclined and generally adopting the habits of civilization. The present year will not show such increase in agricultural products as was hoped for. This resulted in part from the enforced absence of the Indians from their farms at a season when they needed attention, during the visit of the Sioux Commission, but more largely from the destructive hot south winds which visited this locality in the latter part of June.

The agency schools, which form the most important factor in the civilization of the Indian, are doing good work, with a full attendance of pupils. It is a source of satisfaction to note the increasing interest manifested in them by the Indians.

The field of missionary work has been enlarged, and much good may be expected to result from the earnest labors of those engaged in this laudable work.

Very respectfully,

H. D. GALLAGHER,
U. S. Indian Agent.

Hon. A. C. MELLETTE,
Governor of Dakota.

UNITED STATES INDIAN SERVICE,
Sisseton Agency, Dak., October 26, 1889.

SIR: In obedience to your request I hasten to give such information of the Lake Traverse Reservation, Dak., and of the Sisseton and Wahpeton Indians living thereon and owning the same, as I believe will be interesting and important.

The Indians of this reservation have taken their allotments, with but few exceptions. Out of 1,407 there can not be more than ten or twelve who have neglected or refused to take their allotments.

The late census shows a population of 1,407 of this tribe, and their patents are being delivered from this agency as fast as called for. The whole number of patents issued and ready for issue is 1,339, and these patents cover about 127,000 acres of the reservation, leaving of surplus lands about 730,000 acres.

No rations have been issued to this tribe for the last four years, and consequently they have been obliged to cultivate the land and engage in the work of the white man. Many of them have already learned to take care of themselves, and have accumulated some property; but the majority of them are very poor, and have made but little headway, either in farming or other industries.

It is true that this section of country has suffered with drought for several years past, and this has discouraged these people so much that many of them have let their lands lie idle.

I made a careful examination of the condition of the poor and destitute of late, and laid before the Indian Department the poverty and destitution of these people; and in accordance with my recommendation a fund of \$2,000 was promptly placed at my disposal for the purchase of provisions for the relief of destitute and suffering. The census shows 334 children of school age, and all reasonable efforts are being made to place as many of them at school as possible. There are two schools in operation; one is a contract school, with accommodations for 160 scholars, and the other school is a Government industrial boarding school, with accommodations for 130 scholars. These two schools are lively competitors in obtaining and retaining pupils, and all proper efforts and inducements are made and offered to place scholars in their respective schools.

The success of the schools guaranties a complete success in this work of civilization.

'T is education forms the common mind:
Just as the twig is bent the tree's inclined.

I am, sir, with regards, your obedient servant,

WILLIAM MCKUSICK,
U. S. Indian Agent.

Gov. A. C. MELLETTE,
Bismarck, Dak.

UNITED STATES INDIAN SERVICE,

Crow Creek and Lower Brulé Agency, S. Dak., October 24, 1889.

SIR: Your letter of inquiry as to the condition of the Indians at this agency reached me by last mail. In reply I have to say that the Indians at this agency are all Sioux and number about 2,200.

From consumption and scrofula—if that be a disease—they seem rather on the decrease.

Their moral condition is excellent, and I am pleased to report that, while it may be slowly, they are surely advancing to a state of self-support and civilization. They are realizing more and more each year the advantage of farming, stock raising, and, in fact, are beginning to learn that labor well applied yields good returns in the shape of comforts and luxuries. They promise to become creditable and law-abiding citizens of the new State of South Dakota.

Very respectfully,

W. W. ANDERSON,
U. S. Indian Agent.

A. C. MELLETTE,
Governor, Bismarck, Dak.

UNDEVELOPED RESOURCES.

Rapid as has been the development of the Territory during the past ten years, but a fraction of her immense resources have as yet been brought into the wealth-producing area.

Of the 96,596,480 acres of land in Dakota but 39,872,102 acres had been entered up to the 30th of June, 1889. Of this area but 10,000,000 of acres were in cultivation the present year; in other words, less than one-ninth of the total area has been brought into cultivation. When the yield of various crops is taken into consideration some idea of agricultural Dakota may be gained.

About 27,000,000 acres of the total area of the Territory is now included in the Indian reservations. Of these lands about 11,000,000 acres are about to be opened for settlement, thus greatly enlarging the present available area of 19,877,273 acres.

But Dakota has other great resources. In the southeastern and eastern portions of the Territory are located some of the largest quarries in the country, from which are taken large quantities of beautiful jasper and superior granite. In the Black Hills, that Golconda of Dakota, rich bearing ores of gold, silver, tin, and copper are found. Although but a small portion of the mineral wealth has been developed, the product of gold and silver for the ten years from 1877 to 1887, inclusive, was \$36,920,000, of which amount \$2,000,000 was silver. The tin deposits promise to be an even greater source of wealth than finer metals. The United States imports annually \$30,000,000 of tin and tin-plate. It is safe to predict that within a few years this large sum will be saved to the country, and the tin used will be produced and manufactured at home. The Black Hills contain greater deposits of tin ore than the mines of Wales, Bohemia, Saxony, and Portugal combined.

It requires but development and a fostering policy on the part of the Government to make the Black Hills the first tin-producing region of the world.

During the past two or three years discoveries of coal, oil, and natural gas have been made in various portions of the Territory. A superior quality of lignite is found in the Missouri Valley north of Bismarck, and at other points cropping out from the bluffs along the streams. Vast deposits of lignite and soft coal are found in the whole region west of the Missouri River, and also in the northern portion of the Territory, while veins ranging from 5 to 20 feet in thickness are found in the Black Hills. It is reported, and apparently upon good authority, that

anthracite coal equal to that of Pennsylvania is found along the Moreau River in the Sioux Indian Reservation.

Oil, it is said, is found in the Turtle Mountain region in North Dakota, and gas-bearing strata have been found in a number of counties, notably at Ashton, Spink County, and in Sully County, by parties engaged in digging wells. Practically, nothing has been done to develop these deposits of fuel. Experiments are expensive and the practical knowledge of experts wanting. It would seem that some provision should be made by the Government for the investigation of these sources of wealth. The field would prove a rich one for the Geological Survey, and certainly the labor of this corps could not be turned to a more practical end. With its resources, agricultural and mineral, Dakota may with justice be pronounced one of the richest regions in the United States.

STONE QUARRIES.

The deposit of stone in southeastern Dakota, more particularly in the counties of Minnehaha, McCook, Hanson, and Moody, which is variously styled Sioux Falls granite, quartzite, and jasperite—the last of which was given to it by Senator Stewart, of Nevada, some years ago, and by which it is chiefly recognized now—is an important source of wealth to South Dakota. This stone is of various qualities as regards the closeness of its texture and color. It is very largely a silicate, is of very close texture, varying in color from a pinkish gray to a dark chocolate. It rates about fifty on the scale of the diamond, and the pure quality is absolutely free from any foreign substance, such as mica, hornblende, and other ingredients usual to a conglomerate stone. It is a sedimentary rock, and owing to the fact that there is no such deposit elsewhere in the world there is much speculation as to its probable depth.

Mr. J. H. Drake, of St. Paul, who has been largely identified with stone industries, was the first to discover the valuable uses to which this supposed worthless mass of flint could be put. He first, by the use of the lapidary art, found that it took an exquisite mirror polish, and later he discovered that with properly tempered steel tools the material could be broken into shape with surprising ease and astonishing accuracy, enabling workmen to break into shape what would otherwise require to be chiseled or drilled. Paving blocks can be manufactured from it, and despite the long haul and increased freight to Chicago, as compared with the Wisconsin granite quarries, an enormous business has resulted with the large cities, including Kansas City, Omaha, and others, variously estimated at three to five thousand car-loads since the discovery of these cleavage properties. Likewise a large building trade is constantly on the increase. It is estimated that about seven hundred men are engaged and the work grows yearly.

Quite recently it has been discovered that the stone found at a considerable depth is practically fire-proof, and the Haxtun Steam Heater Company, of Kewaunee, Ill., having made a test of it at white heat in their petroleum furnace, have found it to be almost indestructible and far superior and more economical than fire-brick. This promises to be a great industry not heretofore thought of. Aside from the commercial importance to the immediate locality in which this stone is found, with the development of South Dakota the demand for it must increase for all buildings of beauty and permanence for foundation stone, and in time an immense demand will obtain.

A diamond drill excavating corps has been working to the depth of 575 feet at Sioux Falls, with no symptoms of an exhaustion of the deposit.

CEMENT.

During the past twelve months it has been found possible to utilize the stone taken from the inexhaustible chalk-stone cliffs on the Missouri River. This stone is practically useless for building purposes and is too soft for pavements and walks, but it has been found to possess the ingredients necessary for a very fine quality of cement.

Repeated experiments have demonstrated the fact that this cement is far superior to any cement now being manufactured, surpassing the Portland cement, the best the world has known up to this time. The Portland cement yields to a pull of 600 pounds to the square inch, while the Yankton cement, thoroughly tested, endured a strain of 800 pounds, thus proving that the tensile strength of the Yankton cement is 25 per cent. greater than that of the best cement now on the market.

A syndicate of eastern capitalists is erecting extensive works at Yankton in order to utilize this very valuable discovery. The capacity of the works already commenced will be from 150 to 250 barrels per day, and will employ in the neighborhood of 100 men. This plant will be enlarged from time to time as the demands of the business require.

RAILROADS.

The aggregate mileage of railroads in the Territory of Dakota has increased very materially during the past four years, and the gross earnings derived from such railroads have shown a marked advance. It has not been the policy of railroads during the past four years to extend their lines in Dakota without an immediate prospect of returns in the way of earnings. The increase in the mileage, therefore, proves conclusively that the business of the country has been growing in volume, rendering increased facilities for commerce imperatively necessary. The table given below shows the number of miles of rail-road in operation in the Territory of Dakota for the past four years respectively, and the corresponding gross earnings for such years. This table includes the pro rata of interstate earnings as well as of such earnings upon business which originated and eventuated within the Territory of Dakota.

Year.	Mileage.	Earnings.
1885.....	2, 829. 25	\$6, 471, 733. 02
1886.....	3, 419. 89	7, 077, 650. 97
1887.....	4, 299. 30	7, 846, 714. 66
1888.....	4, 463. 97	8, 756, 189. 31

A close examination of more detailed statistics develops the fact that the increase in the local business of the Territory of Dakota has been more rapid than has been the increase in interstate business. The reason for this is that local distributing points are being built up, to which merchandise is shipped from the East and from which the same is distributed throughout the Territory.

A very cordial business feeling exists between the various parts of the Territory, and the interchange of local business is constantly increasing. It is a just cause for regret, however, that the railroads, acting, as it would seem, in conjunction with the wholesalers and jobbers of distributing points outside of the Territory, have been endeavoring

to put a stop to the growth of wholesale business in Dakota. A number of instances of discrimination against distributing points in Dakota on the part of the railroads have been brought to light, and a case of this sort is now pending before the Interstate Commerce Commission. Railroads have much to gain by a fair and impartial treatment of their patrons in Dakota, and actions of the sort above mentioned will tend to engender a hostile feeling which is very likely to culminate in adverse and arbitrary legislation.

TELEGRAPHS.

The number of miles of telegraph operated in the Territory of Dakota during the past three years have been as follows:

	1886.	1887.	1888.
	<i>Miles.</i>	<i>Miles.</i>	<i>Miles.</i>
1-wire	2,094	2,394	2,230
2-wire	77	394	1,408
3-wire	4	1	398
4-wire	227	227	8
5-wire .....	.....	3	.....
6-wire	18	18	18

MANUFACTURES AND WATER-POWER.

Manufactures of various kinds are springing up on every side in each Dakota, and continue to present many excellent opportunities for investment.

Partial statistics obtained in 1887 make the following showing for the whole Territory during that year: 29 brick yards, 16 breweries, 7 blank-book manufactories, 6 bottling works, 4 boiler shops, 5 broom factories, 26 creameries, 33 cigar factories, 6 cheese factories, 1 cornice works, 1 cracker factory, 3 coal mines, 114 flour mills, 33 feed mills, 8 flax and tow mills, 7 foundries, 1 grain-separator establishment, 3 gas works, 4 marble works, 17 ore-reducing works, 5 packing houses, 3 plow works, 5 planing mills, 2 pop factories, 1 plaster of Paris works, 1 paint works, 1 stone-polishing works, 4 sash and door factories, 1 spark-arrester manufactory, 1 shingle mill, 1 soap works, 12 saw mills, 1 shirt factory, 104 wagon works, 5 wood-working establishments, 1 vinegar factory, and 1 woolen mill.

The industries above enumerated represent a capital of over \$11,000,000. There has been a large increase in all these enterprises since the above table was compiled, and the manufacturing interests of Dakota, while yet in their infancy, are destined in the near future to assume gigantic proportions.

The immense artesian basin of the James River Valley lies at an average depth of less than 1,000 feet below the surface, and is believed to be supplied from the great lakes of the North.

The water is reached through a deposit readily pierced, and the flow at the surface has an average pressure of more than 100 pounds to the square inch, the supply being inexhaustible if, as is believed to be the case, it is connected with the lakes, it will furnish the cheapest power known upon the earth, sufficient to run all the machinery in the world, while the waste water will make Dakota, which is now productive, the granary of the nations.

DIVISION AND STATEHOOD.

It has been a prevailing belief among the people of Dakota from its earliest settlement that it should be divided and enter the Union as two States. This sentiment was solely the result of the conviction, grown from experience, that the area of Dakota was too great for healthful, economic municipal government, and not because of any incongruity or jealousy between sections. The sentiment in favor of division seems to have been universal, and a common effort of all sections had been uniformly devoted to this end, except as distracted occasionally by local environments. This fact is evidenced by the successive declarations of political conventions of both parties, Territorial legislatures, the repeated utterances of her religious and benevolent conventions, the voice of the press, and the steady efforts of her people for the past fifteen years.

Frequent delegations were sent to importune Congress for the division of the Territory as early as the year 1881. All these efforts failing, by a spontaneous movement in the year 1883 the people of South Dakota, with practical unanimity, regardless of party affiliations, proceeded to elect delegates to a constitutional convention, which met in Sioux Falls in September and enacted a constitution, which was submitted to popular ballot in the month following and ratified by a large majority.

The committee appointed for that purpose failed to secure for this movement the favor of Congress, and to emphasize the popular demand the legislature, in 1885, passed, by unanimous vote, a bill authorizing South Dakota to proceed, under due protection of Territorial law, to elect delegates to a second convention, which met at Sioux Falls and enacted a second constitution, and this was ratified by popular ballot in the fall. This constitution provided for the election of a full complement of State, district, and county officials, as well as representatives to the national Congress; all of which was done, and upon proclamation of the governor elect the legislature of the proposed State met at Huron, which had been designated by popular ballot as the temporary seat of government, and elected two representatives in the United States Senate. The constitution had provided that no functions should be exercised by any officers of the proposed State, except such as were necessary, preliminary, and incidental to admission into the Union until after the State should be so admitted by Congress. The State, as defined by each of the conventions, had been bounded on the north by the forty-seventh parallel of latitude and was called Dakota. The choice of the name Dakota by the south State had developed something of an opposition to the movement in the north, while the division on the parallel of latitude had developed local opposition on account of dividing counties and thus disarranging county seats and boundaries; and this, added to the influence of an administration to whom it was believed the new States would be opposed politically, resulted in the defeat of the strenuous efforts to secure the recognition of this government. In fact, it is worthy of note, that President Cleveland, throughout his term, persistently ignored the movement, never so much as alluding to it in his voluminous messages to Congress.

The population of Dakota meantime had increased to nearly three-quarters of a million of people, who were fully equipped by material development and equipped with all the necessary qualifications for local government, as the accompanying report abundantly shows. They made their cause an issue in the late Presidential campaign, and the people decided in their favor. Immediately all opposition to the will of her

people disappeared, and with the change of boundary a few miles from the forty-seventh parallel to the seventh standard parallel, so as to preserve the autonomy of counties, and the change of name to South Dakota, the Fiftieth Congress, on the 22d day of February, 1889, approved an act admitting South Dakota into the Union under the constitution enacted in 1885, requiring that it should first be approved by popular ballot on two additional elections, all of which has been accomplished, the majority in favor of its adoption having increased at each of the three elections.

By the same act Congress, yielding to the inevitable, provided for the admission on equal terms of the State of North Dakota, embracing all their part of the Territory being north of the seventh standard parallel; and accordingly, on the 1st day of October, 1889, the people formally ratified a constitution which had been enacted at Bismarck on the 4th day of July, and elected a full complement of executive, legislative, and judicial officers thereunder.

South Dakota provided in the same manner and on the same date for her State government, and on the 15th day of October her legislature assembled at Pierre, which was chosen as the temporary seat of government, elected United States Senators, according to a provision in the ordinance and schedule of her constitution.

A complete and satisfactory adjustment relative to territorial indebtedness and property has been arrived at and incorporated in the constitutions of the two States.

The following is the vote upon the adoption of the constitution and the propositions submitted separately by the people of South Dakota: For the constitution, 70,131 votes; against the constitution, 3,267 votes; for prohibition, 40,234 votes; against prohibition, 34,510 votes; for minority representation, 24,161 votes; against minority representation, 46,200 votes. Upon the location of temporary seat of government the vote stood as follows:

	Votes.		Votes.
Pierre	29,256	Sioux Falls.....	11,888
Huron	15,647	Mitchell	7,793
Watertown	12,012	Chamberlain	2,421

The vote in North Dakota upon the adoption of the constitution, and the article submitted separately relative to prohibition, was as follows:

	Votes.		Votes.
For the constitution	27,441	For prohibition.....	18,552
Against the constitution.....	8,107	Against prohibition.....	17,393

Bismarck is designated as the permanent capital of North Dakota.

It will thus be seen that the two States are ready to assume their governmental functions the moment the President so authorizes by proclamation, the constitutions having been duly certified to him by the executive of this Territory.

CONCLUSION.

The foregoing statement of what Dakota has accomplished in Territorial condition, in which she has long been held by arbitrary political influences, is believed to fairly and truthfully represent her development as she merges from her proud, historic, Territorial condition and enters upon her higher duties and responsibilities as the States of South Dakota and North Dakota.

The sacred ties of the past, as well as a common interest in the future,

will ever specially unite the two States together, while there is no other instinct or purpose or possible conduct on the part of her people than devout loyalty to the American Union, to whose perpetuity they pledge themselves and their descendants forever.

While her material development, which is chiefly the work of a decade, has been phenomenal, she is proud chiefly of the fact it has been accomplished without the crime and bloodshed usual upon the establishment of civilization in the wilderness. Her people have been a law unto themselves in the absence of courts and peace officers, and never has the militia of the Territory or of the nation been compelled to the exercise of force in her behalf. She has safely and triumphantly passed through the excitement consequent upon the adjustment of title of lands, location of county and State seats of government and their attendant dangers, and now furnishes two States, fully equipped and grounded upon the broad intelligence and fervent patriotism which must ever constitute the hope of the Republic.

I desire to gratefully acknowledge the services of the several Territorial officers in the preparation of this report, notably of Hon. F. H. Hagerty, commissioner of immigration, in addition to those whose names appear, and to say in behalf of one and all that I appreciate the zeal, efficiency, and integrity with which they have discharged their embarrassing duties during the few months we have worked together in administering the final affairs of our Territory.

All of which is submitted.

Most respectfully,

ARTHUR C. MELLETTE,
Governor Dakota Territory.

Hon. JOHN W. NOBLE,
Secretary of Interior, Washington, D. C.

REPORT

OF THE

GOVERNOR OF IDAHO.

EXECUTIVE DEPARTMENT,
Boise City, Idaho, October 15, 1889.

SIR: I have the honor to submit the following review of the progress of the Territory of Idaho during the last year, and to present such suggestions relative to the welfare of the Territory as in my opinion should be transmitted for your consideration and for reference to Congress. I have also embodied some historical incidents relating to exploration, early settlements, organization, progress, and development.

The first white man who set foot upon the soil of Idaho was Captain Lewis, with a detachment of Lewis and Clark's exploring expedition. Captain Lewis crossed the main range of the Rocky Mountains from Horse Plains, now known as Horse Prairie, in Beaverhead County, Montana, to the Lemhi, a tributary of Salmon River, on the 12th day of August, 1805. Five years later the Missouri Fur Company established a trading post on Snake River, but soon after abandoned it. In 1811 Wilson P. Hunt, with sixty men of the Pacific Fur Company, passed through Idaho to the Pacific coast. In 1834 Captain Bonneville, with his company of nearly one hundred men, spent part of the season in eastern Idaho, exploring the headwaters of the Snake and Salmon Rivers. In the same year a party of traders and trappers, commanded by Nathaniel I. Wythe, established Fort Hall as a trading post, near Snake River, and on the present Fort Hall Indian Reservation.

In 1860 gold in paying quantities was discovered in Idaho by a party of prospectors, commanded by Capt. James Pierce, from Walla Walla Valley, Washington Territory. The first locations were on Oro Fino Creek, a tributary of the Clearwater. Other valuable discoveries followed in rapid succession. The first permanent settlement was made at Mount Idaho, the present county seat of Idaho County, in May, 1861.

Idaho was created a Territory by act of Congress March 3, 1863, from parts of Dakota, Nebraska, and Washington Territories. Originally it embraced within its boundaries about 325,000 square miles. By the creation of the Territories of Montana and Wyoming, under the act of Congress May 25, 1868, Idaho was finally reduced to 86,294 square miles, or 55,228,160 acres. It extends from the British possessions on the north to Utah and Nevada on the south; from Montana and Wyoming on the east to Oregon and Washington on the west; having a length from north to south of about 410 miles, and a width from east to west varying from 44 to 306½ miles.

Idaho is an Indian word, and when translated means "Gem of the Mountains." The principal industries of the Territory are mining, farming, and stock-raising, all of which will be noticed under their proper heading.

Population by counties, 1889.

Counties.	Popula- tion.	Counties.	Popula- tion.
Ada	11, 275	Latah	11, 250
Alturas	3, 300	Lemhi	5, 500
Bear Lake	5, 900	Logan	6, 300
Bingham	14, 773	Nez Perces	5, 200
Boise	4, 900	Oneida	6, 900
Cassia	4, 500	Owyhee	4, 000
Custer	4, 900	Shoshone	9, 500
Elmore	4, 500	Washington	5, 700
Idaho	2, 879		
Kootenai	2, 500	Total	113, 777

The population of a district so large as Idaho is difficult to determine, and can not be ascertained accurately until the census is taken. By those who have a knowledge of the topography and industries of the Territory this is readily understood.

Mining being one of our principal industries, we find men in small parties engaged in working placer mines in distant and secluded sections, several miles distant from other mining camps. Again, we find men on the mountain slopes, and in some instances near the summit of our most lofty mountains, engaged in opening and developing quartz mines, which carry gold, silver, and other valuable metals. A considerable number of men are constantly employed in prospecting for mines. Small settlements are found in nearly all the mountain valleys. Settlements on the plains and in the lower valleys cover so large an area of country, that it is difficult to obtain a correct estimate of population among them. The vote for Delegate in Congress in November of last year was 16,013. I deem it necessary to explain why the vote cast at that time can not be taken as the basis for an estimate of the population of the Territory. The legislature at its thirteenth session passed a registry law, making it obligatory upon all voters to register, and requiring the voter to take a rigid test oath, which reads as follows:

You do solemnly swear (or affirm) that you are a male citizen of the United States over the age of twenty-one years; that you have actually resided in this Territory for four months last past and in this county thirty days; that you are not a bigamist or polygamist; that you are not a member of any order, organization, or association which teaches, advises, counsels, or encourages its members, devotees, or any other person to commit the crime of bigamy or polygamy, or any other crime defined by law, as a duty arising or resulting from membership in such order, organization, or association, or which practices bigamy or polygamy, or plural, or celestial marriage as a doctrinal rite of such organization; that you do not, either publicly or privately, or in any manner whatever, teach, advise, or encourage any person to commit the crime of bigamy or polygamy, or any other crime defined by law, either as a religious duty or otherwise; that you regard the constitution of the United States and the laws thereof and of this Territory, as interpreted by the courts, as the supreme law of the land, the teachings of any order, organization, or association to the contrary notwithstanding, and that you have not previously voted at this election; so help you God.

It is estimated that there are 25,000 Mormons in Idaho and as polygamy is part of the doctrine taught by the Mormon Church, but few of their order took the oath. It is estimated that between 3,000 and 4,000 Mormon voters remained away from the polls.

Many of our miners live a long distance from established voting precincts, and being deprived of the privilege of voting for President or any of our Territorial officers, do not take sufficient interest in the election to lose several days' time in going to and returning from the polls. What is said of the miners will also apply to lumbermen and to ranchmen in small and remote settlements. From all the classes above enumerated, with the foreign element not naturalized, I estimate that not less than 6,500 men failed to vote.

The estimated population of the Territory, as given in the foregoing table, is taken from assessment rolls and from correspondence with intelligent and well-informed men in the several counties. I am confident that when the census is taken next year the estimates given will be found to be conservative and considerably under the actual population.

In addition to the foregoing estimates of population obtained from sources as stated, I submit the following :

By comparison, we can calculate the increase of population from the year 1880, when the census was last taken, which gave us 32,619 souls. Of the total population at that time, 6,698 were children of school age.

We may therefore estimate 4.87 inhabitants to every child of school age, as reported to this Department, which gives us the following increase of population :

Years.	Children of school age.	Rate	Total population.	Years.	Children of school age.	Rate.	Total population.
1880-'81	6,698	4.87	32,619	1885-'86	15,399	4.87	74,993
1881-'82	8,193	4.87	39,999	1886-'87	17,372	4.87	84,601
1882-'83	9,650	4.87	46,995	1887-'88	19,994	4.87	97,370
1883-'84	10,936	4.87	53,258	1888-'89	24,071	4.87	117,225
1884-'85	13,140	4.87	63,991				

Upon this basis of calculation, which is undoubtedly more accurate than by comparison with the usual estimates by voting population or estimates given by counties, it will be seen that the present population is 117,225 souls.

Distribution by nationalities is a matter of too much conjecture without an actual census-taking in the Territory.

Annual assessment of real and personal property for the fiscal year 1889.

Counties.	Valuation.	Counties.	Valuation.
Ada	\$3,041,822.50	Latah	\$2,101,914.00
Alturas	814,387.00	Lemhi	725,000.00
Bear Lake	861,294.00	Logan	1,941,822.00
Bingham	2,863,712.09	Nez Percés	1,203,192.00
Boisé	718,441.13	Oneida	1,090,864.00
Cassia	948,611.00	Owyhee	1,007,775.00
Custer	882,800.00	Shoshone	1,632,386.00
Elmore	1,161,771.45	Washington	1,186,796.00
Idaho	976,852.00		
Kootenai	788,599.57	Total	23,948,039.65

It will be seen by the above table that the taxable property as it appears on the assessment rolls for the fiscal year amounts to \$23,948,039.65. The subsequent assessment rolls are completed and filed late in October, and add to the regular assessment fully one million of dollars, bringing the total assessment close to \$25,000,000. This is an

advance over the assessment of 1888 of nearly \$3,500,000. An increase of 16 per cent. in a year of drought and great depression of some of our industries is certainly gratifying. When attention is also called to the fact that lands not patented are not taxed; that among these are farms under the highest state of cultivation, and worth from \$10 to \$40 per acre; that our mines are not taxed, and that these represent an annual product of \$14,000,000 and an investment of \$50,000,000, it will readily be seen that not one-third of the real wealth of Idaho is at all represented on the assessment rolls.

Condensed classification of property assessed, 1889.

Property.	Valuation.
Real estate and improvements.....	\$14, 222, 487. 20
Hay and grain	3, 534. 00
Live stock.	5, 741, 307. 00
Goods, wares, and merchandise.....	1, 621, 181. 25
Money, bank shares, and other securities.....	684, 092. 26
Personal property not classified.....	1, 675, 437. 94
Total	23, 948, 032. 65

PUBLIC LANDS.

The area of the Territory, from careful estimates, may be classified as follows :

Class.	Acres.
Agricultural lands.....	16, 000, 500
Forest lands	10, 000, 300
Grazing and mineral lands	20, 000, 000
Rough, mountainous, unfit for cultivation	8, 000, 000
Lakes and rivers.....	1, 228, 160
Total	55, 228, 160

From the most authentic information I can obtain from the several land districts, 8,500,000 acres have been surveyed.

Of the lands surveyed about 4,500,000 have been entered or filed under the several land acts. A large percentage of the surveyed lands not claimed are so distant from streams that the expense of conveying water to them for irrigation is too great for individuals to undertake.

Many of these lands, together with the greater part of the unsurveyed public lands, must be covered with high-line ditches or canals constructed by the Government, by the Territory, or by companies, carrying water in sufficient quantity for irrigation and domestic purposes.

On the question of irrigation I will submit my views later in this report.

There are five land offices in the Territory, which present the following exhibit of the business done in their respective offices since last report. I submit their reports in full.

UNITED STATES LAND OFFICE,
Cœur d'Alene, Idaho, September 3, 1889.

SIR: The following is a full exhibit of the business of this office from September 1, 1888, to August 31, 1889, inclusive, viz:

Class.	No.	Acres.
Homestead filings	41	6,007
Final homestead entries	15	2,302
Pre-emption filings	60	8,800
Cash entries	9	1,289
Timber-culture entries	3	480
Application for patents mineral lands	24	335
Mineral entries	17	293
Total	169	19,506

Very respectfully,

WM. J. McCLURE,
Receiver.

Hon. GEORGE L. SHOUP,
Governor of Idaho, Boise City.

UNITED STATES LAND OFFICE,
Lewiston, Idaho, September 2, 1889.

SIR: In reply to your favor of the 12th ultimo we have the honor to give herewith an exhibit of the business done by this office from September 1, 1888, to August 31, 1889.

Class.	No.	Acres.
Homestead filings	175	26,520
Final homestead entries	115	18,012
Pre-emption filings	360	49,880
Pre-emption and commutation cash entries	171	22,189
Timber-culture filings	37	4,230
Final timber-culture entries	2	240
Applications for patents to mining lands	1	15
Mineral entries, none		
Total	861	121,086

The acreage is given in round numbers.

Very respectfully,

FRANCIS F. PATTERSON,
Register.
 CHARLES M. FORRE,
Receiver

Hon. GEORGE L. SHOUP,
Governor of Idaho, Boise City.

UNITED STATES LAND OFFICE,
Hailey, Idaho, September 1, 1889.

DEAR SIR: Responsive to your request of August 12, I furnish an exhibit of business done in this office for the year ending August 31, 1889:

Kind of entry.	No.	Acres.
Homestead entries	200	15,288
Homestead entries, final	102	13,978
Pre-emption filings	115	17,720
Pre-emption proofs	48	9,541
Timber-culture entries	47	5,697
Timber-culture proofs	None	.....
Desert-land entries	52	8,615
Desert-land proofs	32	5,840
Applications for patents, mineral lands	37	732
Mineral entries	34	676
Total	667	78,081

Very respectfully,

H. O. BILLINGS,
Register.

Hon. GEO. L. SHOUP,
Boisé City, Idaho.

UNITED STATES LAND OFFICE,
Boisé City, Idaho, September 16, 1889.

SIR: As per your request of September 12, 1889, I have the honor to furnish the following report of business in this office from September 1, 1888, to August 31, 1889:

Kind of entry.	No.	Acres.
Homestead entries	189	17,268.11
Final homestead proofs	82	12,119.71
Pre-emption filings	158	15,223.01
Pre-emption proofs	80	8,234.90
Timber-culture entries	58	7,833.47
Timber-culture proofs	None	.....
Desert-land entries	55	17,606.20
Desert-land proofs	15	3,213.52
Application for patent, mineral land	10	171.005
Mineral-land entries	11	126.796
Total	658	81,857.321

Very respectfully,

HARLEN PEFLEY,
Register.
H. C. BRANSTETTER,
Receiver.

His Excellency, GEO. L. SHOUP,
Governor of Idaho.

UNITED STATES LAND OFFICE,
Blackfoot, Idaho, August 19, 1889.

SIR: In response to your letter of August 12, 1889, we have the honor to furnish you with the following exhibit of business done by this office from September 8, 1888, to August 19, 1889:

Class.	No.	Acres.
Homestead entries	256	38,754.08
Final homesteads	122	18,919.41
Timber-culture entries	148	20,127.23
Pre-emption entries	148	38,400.00
Desert entries	187	53,490.00
Desert proofs	37	4,897.44
Pre-emption proofs	133	15,836.59
Total	1,031	190,424.75

There are approximately 3,500,000 acres of surveyed lands in Blackfoot district, with perhaps one and a half million acres yet open for entry under the different land laws. The greater portion of these latter is susceptible of irrigation and cultivation, in addition to 5,000,000 acres of unsurveyed land, a preponderance of which could be irrigated and farmed to a good advantage under some such system as is talked of now. The necessity of creating reservoirs at suitable points along the Snake and Blackfoot Rivers is fast becoming obvious. During the high-water period in the early spring more water passes through these streams and practically goes to waste than would be required to irrigate all the lands referred to above. In seasons such as the one through which we have just passed great hardships and suffering are experienced by the settler, who depends on the waters of these streams for the irrigation of his crops and for water with which to supply his stock. This arrangement leads also to endless litigation, and parties who for years have been undisturbed in the use of water are almost universally plaintiffs or defendants in suits now pending to determine the right of one party or the other to the water.

We can not impress upon you too strongly the necessity of commending this matter of reservoirs to Congress and to the honorable Secretary. We reiterate the recommendations of our predecessors relative to opening up as speedily as possible the Fort Hall Indian Reservation, comprising 1,300,000 acres of the choicest and most available agricultural lands in the Territory. Each head of a family should be allotted 320 acres and the balance thrown open to settlement. Your attention is also called to the necessity of extending the public surveys in this district, particularly in the Teton Basin, where there has been a large settlement of late, and the parties are anxious to procure their titles. This is the case throughout the northeastern portion of Bingham County generally. Congress, last winter, cut off a large tract of the Fort Hall Reservation south of the town of McCammon, which is quite largely settled and has been for years, and these settlers are desirous of perfecting titles to their lands, which in some cases they have lived upon for upwards of twenty-five years. We earnestly request your favorable recommendation of these much-needed surveys.

Very respectfully,

PERRY J. ANSON,
Register.
W. H. DANILSON,
Receiver.

Hon. GEORGE L. SHOUP,
Governor of Idaho, Boise City.

RECAPITULATION.

Class.	Total filings for 1889.		Total proofs for 1889.	
	Number.	Acres.	Number.	Acres.
Homestead.....	861	103,837	436	65,331
Pre-emption.....	841	130,023	441	57,693
Timber-culture.....	293	38,368	2	240
Desert.....	294	79,771	84	13,950
Mineral.....	72	1,254	62	1,096
Total.....	2,361	353,253	1,025	137,710

I am informed that fully one-third of the surveyed lands not patented or filed on can not be classed as agricultural lands, being too broken or mountainous for agricultural purposes. Many of the surveys are defective, in some localities townships being only surveyed in part.

There should be larger appropriations made for the survey of public lands in Idaho. Hundreds of settlers have spent half an average lifetime upon their farms; have erected valuable buildings; have constructed irrigating canals at the cost of thousands of dollars; have connected their farms with the towns by grading excellent roads and building bridges, and yet they can obtain no legal title to the lands which they have made of the greatest value. They are still "squatters" tolerated by the Government, their rights subject to dispute, and not transferable in any valid manner. The pioneers of Idaho do not deserve such treatment. They have helped create wealth which is a part of the riches of their country; under the greatest difficulties they have upheld American institutions, established American schools, and cultivated loyalty and love of freedom and justice; they have obeyed the laws and defended them—the General Government ought to touch them with a father's hand, and make them welcome to the benefactions of their father's house.

It is absurd to apply rules of survey to Idaho which were constructed for Iowa and Kansas. The Department should provide pay and appliances demanded by a mountainous country. The survey should not only be a surface measurement of land, but it should also be a mineral and a geological survey; it should be an assistant in our irrigation system, and a chart for forests and streams.

President Grant years ago challenged the attention of the world to "the strong box" in the mountains, wherein is locked the treasures of the land. The surveyors of the United States should not lag twenty years behind our pioneers—rather the surveyors should themselves be the pioneer corps to open to universal knowledge the wealth of Idaho. Every consideration of justice, every sound business principle, every thought of loyalty to our own land and people should prompt Congress to make the most generous provision for a complete topographical survey of the unsurveyed portions of this entire Territory.

RAILROADS.

By virtue of a law enacted by the fourteenth legislative assembly, the governor, controller, and treasurer constitute a board of equalization, whose duty it is to place a valuation per mile on each line of road passing through more than one county. This valuation so made is certified to the clerks of the boards of county commissioners, through which such

lines pass, and the number of miles and valuation are placed on the assessment books of these counties.

Oregon Short Line Railway.—This road passes through the Territory from east to west, entering the Territory from Wyoming and passing thence through the following counties to Huntington, in Oregon:

Oregon Short Line Railway Company.

County.	Miles.	Valuation per mile.	Aggregate valuation.
Ada.....	75.58	\$6,500	\$491,270
Bear Lake.....	45.48	6,500	295,620
Bingham.....	58.31	6,500	379,015
Elmore.....	64.67	6,500	420,355
Logan.....	172.05	6,500	1,118,325
Oneida.....	21.44	6,500	139,360
Washington.....	28.10	6,500	182,650
	465.63	.....	3,026,595

A short distance after entering the Territory this line passes through Montpelier, a thrifty town of 1,200 inhabitants situated in the Bear Lake Valley. Cattle, horses, and sheep are shipped from this town in large numbers; the tonnage in grain is also large.

The town of Soda Springs is noted for the large shipment of stock, and is a favorite summer resort for tourists. The great Soda Springs at this place are not equaled in any country; car-loads of this mineral water have been bottled and shipped to points east and west this season. The trout fishing in the mountain streams near by can not be excelled.

McCammon, at the junction of the Utah and Northern Railway, is on the Portneuf, a stream noted for its beautiful scenery and superb trout. From McCammon to Pocatello there are three rails, the Utah and Northern Narrow Gauge running on same road-bed.

Pocatello is in the heart of the Fort Hall Indian Reservation, and would be one of the thriftiest towns in the Territory if the Indians were allotted lands in severalty, and the remainder of the reservation opened for settlement. The Utah and Northern Railway leaves the Oregon Short Line at this station, running northerly to the Montana line.

Twenty-six miles west from Pocatello are the American Falls on Snake River, and on the line of the Indian reservation. The fine water power at these falls must, in the near future, attract capitalists.

Shoshone is a prosperous town on the great Snake River plains. At this point the Wood River branch leaves the Oregon Short Line Railway and bears a northerly course to Bellevue, Hailey, and Ketchum. Each of these towns is sustained largely by the mines in their immediate vicinity. Bellevue has also a good ranch and grain trade; Hailey is a prosperous county seat, and Ketchum is the shipping point for the large Custer County traffic. About twenty miles from Shoshone are the great Shoshone Falls on Snake River, with which it is connected by stage line. A company is now engaged in surveying a route for a railroad to these falls, which are second to Niagara only in volume of water, but for their grandeur can not be excelled.

Glenn's Ferry and Mountain Home are growing towns. Mountain Home is the main distributing point for the Upper and Lower Bruneau, Castle, and Catherine Creek valleys of Owyhee County. Large shipments of wool, horses, cattle, and sheep are made from this locality to

the eastern markets annually; and when the country surrounding these localities, much of which is arid land, is reclaimed by the proper distribution of water, they will become towns of great importance.

Nampa, 19 miles from Boisé City, is the junction of the Idaho Central Railway with the main line. Its commercial interests with Owyhee County are large.

Caldwell, situated on the Boisé River, is one of the most prosperous towns on the line of this road, being situate in the center of a fine agricultural and grazing district. Its volume of business is increasing rapidly, and it is an excellent shipping point for wool, grain, and live-stock.

Payette and Weiser are growing towns, and as the country becomes settled will be places of much importance.

Utah and Northern Railway.—This road runs from Ogden, in Utah, to Garrison, on the line of the Northern Pacific, in Montana. It enters Idaho near Franklin, and is narrow gauge to Pocatello, 77 miles, where it crosses the Oregon Short Line Railway. From Pocatello north it is standard gauge, of which 129 miles are in Idaho.

Counties.	Miles.	Valuation per mile.	Aggregate valuation.
Narrow gauge:			
Bingham	55.42	\$5,000	\$277,100
Oneida	21.45	5,000	107,250
	76.87	.....	384,350
Standard gauge:			
Bingham	129.62	6,500	842,530
Total valuation			1,226,880

The principal towns situated on this line are Franklin, Pocatello, Blackfoot, Eagle Rock, Camas, and Beaver Cañon.

Blackfoot lies on the northern border of Fort Hall Indian Reservation and is the county seat of Bingham County. It is surrounded by an extensive agricultural and grazing district and is growing rapidly. The Blackfoot United States land office and Territorial insane asylum are located at this point.

Eagle Rock is one of the most progressive towns on this line, with a vast extent of farming lands tributary thereto.

Camas is a supply and shipping point for the extensive silver and lead mines on Lost River and the Birch Creek mining districts. Large quantities of ores are shipped from this place.

Beaver Cañon, at the foot of the mountain, is the center of lumbering interests of great importance and value. National Park tourists leave the railway at this point.

Idaho Central Railway Company.—This road leaves the Oregon Short Line Railway at the town of Nampa, and runs easterly to Boisé City, the capital of Idaho.

Length of road, 18½ miles. It is operated by the Union Pacific Railway Company and is doing an excellent business.

Valuation.

County.	Miles.	Valuation per mile.	Aggregate valuation.
Ada	18.50	\$2,500	\$46,250

Northern Pacific Railway Company.—This road enters the Territory from Montana at the town of Heron, and passes through Hope, Sand Point, Granite, and Rathdrum, the county seat of Kootenai County. On the route it sweeps around three sides of the beautiful Pen d'Oreille Lake.

Length of road, 88 miles.

The company claims an exemption from taxation, by act of Congress, as long as we remain a Territory. Its rolling stock is valued for taxation by the county authorities.

Washington and Idaho Railway Company.—This is a part of the Oregon Railway and Navigation Company's system, and now leased to the Union Pacific Company. Its line starts from Farmington, Wash., and runs east through the Cœur d'Alene Indian Reservation, up the valley of the South Fork of the Cœur d'Alene River, and over the Mullen Pass into Montana. It is standard gauge.

Its line has been graded through the valley of the South Fork, alongside the Cœur d'Alene Company's road, from Mission, in Kootenai County, to Wallace, in Shoshone County, a distance of 25 miles, and is now being graded and bridged to Mullen, 8 miles further east. The iron on this grade will be laid this year and trains running, it is said, by the first day of January, 1890. They have a line surveyed up the North Fork of the Cœur d'Alene River and its tributaries for a distance of 35 miles, which it is believed will be constructed next year.

Valuation.

County.	Right of way.
Shoshone	\$20, 000

Coeur d' Alene Railway and Navigation Company.—This line enters the Territory at the head of navigation of the Cœur d'Alene River, at Old Mission, in Kootenai County, and runs thence in an easterly direction, passing through the towns of Kingston, Wardner Junction, Osborne, and Wallace, ending at Mullen.

The road is constructed entirely on public lands. The company own only the necessary right of way. It has been extended 7 miles or more this season, to Mullen, and is narrow gauge.

This line is operated by the Northern Pacific Railway Company, and it is reported that this company is surveying for an all-rail connection with its line from Cœur d'Alene City to Hauser Junction, in Kootenai County. When this connection is made the Cœur d'Alene road will be altered to a standard gauge, and it is likely will be part of the Northern Pacific Railroad Company's new through line to the East.

Shoshone County furnishes most of the freighting and carriage of passengers. The immense mining products of this county, consisting of gold, silver, and lead ores, are transported over this road. The freight traffic for this year is estimated at not less than 93,000 tons.

Mileage.

Counties.	Miles.	Valuation per mile.	Aggregate valuation.
Kootenai.....	2. 10	\$5, 000	\$10, 500
Shoshone.....	36. 43	5, 000	182, 150
	38. 53	.....	192, 650

Spokane and Palouse Railway.—This road enters the Territory in Nez Perces County, about the middle line of township 37, range 6, running thence southeast and north a distance of 5 miles, and enters Latah County, terminating at the town of Genesee; distance, $1\frac{1}{2}$ miles. It is standard gauge and doing a splendid business. This line is a supply road and is operated by the Northern Pacific Railroad.

Valuation.

Counties.	Miles.	Valuation per mile.	Aggregate valuation.
Nez Perces	5	\$6, 500	\$32, 500
Latah	1. 50	6, 500	9, 750
	6. 50	.....	42, 250

Oregon Railway and Navigation Company.—This is another branch of the Union Pacific system, entering the Territory about 3 miles west of Moscow, in Latah County. Moscow is at present the terminus of the road. Length of road in Idaho, 3 miles.

Valuation.

County.	Miles.	Valuation per mile.	Aggregate valuation.
Latah.....	3	\$7, 797	\$23, 391

Spokane Falls and Idaho Railway Company.—This road commences at the Idaho line and runs in a southeasterly direction to Cœur d'Alene Lake, which is used by the company to transport freight by steamers to the Cœur d'Alene mining region. Length of this road, $13\frac{1}{2}$ miles.

Valuation.

County.	Miles.	Valuation per mile.	Aggregate valuation.
Kootenai.....	13. 50	\$3, 000	\$40, 500

Total mileage of railways in the Territory.

Counties.	Name of railway.	Miles in county.	Valuation per mile.	Aggregate assessed valuations.
Ada	Oregon Short Line Rwy. Co....	*75. 58	\$6, 500	\$491, 270
Bear Lake	do	*45. 48	6, 500	295, 620
Bingham	do	*58. 31	6, 500	379, 015
Elmore	do	*64. 67	6, 500	420, 355
Logan	do	*117. 67	6, 500	764, 855
Oneida	do	*21. 44	6, 500	139, 360
Washington	do	*28. 10	6, 500	182, 650
Alturas	Wood River	*15. 58	6, 500	101, 270
Logan	Branch of Oregon Short Line Rwy. Co.	*54. 38	6, 500	353, 470
Bingham	Utah and Northern Co.....	†55. 42	5, 000	277, 100
Do	do	*129. 62	6, 500	842, 530
Oneida	do	†21. 45	5, 000	107, 250
Kootenai	Cœur d'Alene Rwy. and Nav. Co.	†2. 10	5, 000	10, 500
Shoshones	do	†36. 43	5, 000	182, 150
Nez Percés	Spokane and Palouse	*5.	6, 500	32, 500
Latah	do	*1. 50	6, 500	9, 750
Ada	Idaho Central Co	*18. 50	2, 500	46, 250
Latah	Oregon Rwy. and Nav. Co	*3.	7, 797	23, 391
Kootenai	Spokane Falls and Idaho	†3. 50	3, 000	40, 500
Do	Northern Pacific Co	†88.	(†)	.....
Kootenai and Shoshone.....	Washington and Idaho	†33.	(§)	20, 000
		888. 73	.....	4, 719, 786

*Standard gauge.

†Narrow gauge.

‡Not assessed.

§ Right of way.

THE MIDLAND PACIFIC.

This is a proposed transcontinental line. It will extend to Seattle from Sioux Falls, where it will join a road which has a line running direct from Sioux Falls to Chicago. The connection of these two roads, it is claimed, will make the road 300 miles shorter than any other between the Pacific Coast and Chicago.

A corps of viewers and engineers have been viewing and locating this road during the past summer, entering Idaho on the North Fork of Snake River, crossing the Utah and Northern Railway at Market Lake; thence running across the plains to Birch Creek; from Birch Creek to the divide between Snake and Salmon Rivers; thence down the Lemhi to Salmon City, on the Salmon River; from Salmon City this road is located down and along the Salmon River to Slate Creek, where it will probably leave the river and pass through Camas Prairie to Lewiston. This road when complete will open up much of the interior of the Territory now inaccessible, and will add greatly to our present commerce.

The length of this road in Idaho will approximate 500 miles.

The officers of the Union Pacific system are thinking seriously of changing the line of the Oregon Short Line Railroad, so as to bring the main line via Boise City, and thence down Boise River, through one of the finest and most productive valleys in the Territory, to Caldwell, on the present line.

The same company have made surveys from Huntington down the Snake River to Lewiston. It is believed this road will be built in the near future.

Many other lines and branches have been surveyed, and it is safe to predict that some of them will be built at no distant day. The outlook for ample railway facilities in the Territory is very promising.

Telegraph lines in the Territory.

Counties.	Name of telegraph company.	No. of wires.	No. of miles.	Valuation per mile.	Aggregate valuation.
Ada	Western Union Telegraph Company..	1	75.47	\$50.00	\$3,773.50
Do	do	2	20.00	70.00	1,400.00
Alturas	do	1	15.38	50.00	769.00
Bear Lake	do	1	45.34	50.00	2,267.00
Bingham	do	1	57.72	50.00	2,886.00
Do	do	5	22.80	130.00	2,964.00
Do	do	4	162.24	110.00	18,846.40
Elmore	do	1	64.67	50.00	3,233.50
Kootenai	do	5	58.00	130.00	7,540.00
Do	do	1	8.00	50.00	400.00
Latah	do	1	3.00	50.00	150.00
Logan	do	1	172.05	50.00	8,602.50
Oneida	do	4	21.97	50.00	1,098.50
Do	do	4	21.45	110.00	2,359.50
Washington	do	1	28.08	50.00	1,404.00
			776.17		57,693.90
Kootenai	Northern Pacific Railroad Company..	5		(*)	
Ada	Silver City Telegraph Company		20.00	50.00	1,000.00
Owyhee	do		27.00	50.00	1,350.00
Elmore	Rocky Bar and Mt. Home Telegraph Company.		54.00	25.00	1,350.00
			907.17		61,393.90

* Not assessed.

COMMERCE.

Tons of Idaho products shipped by railroad and steam-boat for year ending July, 1889.

Name of stations.	Name of roads.	Tons.	Total tons.
Franklin	Utah and Northern Rwy. (Union Pacific system)	2,000	15,086
Battle Creek	do	463	
Oxford	do	335	
McCammon	do	679	
Pocatello	do	2,012	
Ross Fork	do	37	
Blackfoot	do	638	
Eagle Rock	do	2,710	
Market Lake	do	175	
Camas	do	5,160	
Beaver Cañon	do	877	
Montpelier	Oregon Short Line Rwy. (Union Pacific system)	3,324	24,178
Soda Springs	do	4,562	
Squaw Creek	do	62	
American Falls	do	3,885	
Minidoka	do	30	
Kimama	do	6	
Shoshone	do	2,983	
Glenn's Ferry	do	54	
Mountain Home	do	1,573	
Nampa	do	1,058	
Caldwell	do	4,610	88,000
Payette	do	2,031	
Boisé City	Idaho Central Rwy. (Union Pacific system)		13,404
Bellevue	Wood River Branch (Union Pacific system)	5,807	
Hailey	do	3,010	42,542
Ketchum	do	4,587	
Moscow	Northern Pacific, Spokane and Palouse Rwy	27,252	184,015
Genesee	do	15,290	
Cœur d'Alene Rwy. and Navigation Co. (points not specified)		80,000	88,000
Northern Pacific Rwy. (estimated)		8,000	
Total			184,015

It is estimated that steam-boats have carried from Lewiston, on Snake River, nearly 50,000 tons, consisting of wheat, oats, barley, flaxseed, etc.

Total tons of freight received for consumption in Idaho for the year ending July, 1889.

	Tons.
Union Pacific system:	
Utah and Northern Rwy, Oregon Short Line Rwy, Wood River Branch, and Idaho Central Rwy	55,000
North Pacific, Spokane and Palouse Rwy Co	21,000
Cœur d'Alene Rwy and Navigation Co. (estimated)	18,000
Northern Pacific Rwy (estimated)	5,600
Estimated tons received at Lewiston by steam-boats	20,000
Total	119,600

Value of products marketed for the year 1889.

Counties.	Cattle, horses, and sheep.	Wool and pelts.	Hides.	Grain and hay.	Fruits and veg- etables.	Lumber.	Brick.	Other building material.
Ada	\$236,500	\$220,000	\$9,500	\$370,000	\$165,000	\$195,000	\$60,000	\$30,000
Alturas	30,000	7,000	2,000	43,900	5,000	50,000	25,000	13,000
Bear Lake	200,000	1,000	1,000	200,000	2,000	50,000	15,000	10,000
Bingham	216,000	43,000	7,000	319,000	39,000	290,000	53,000	61,000
Boisé	67,000	19,000	4,000	130,000	19,000	33,000	7,000	23,000
Cassia	183,350	41,500	1,000	203,900	1,550	17,250	1,000	10,000
Custer	40,000	60,000	1,500	126,100	16,200	30,000	8,000	10,000
Elmore	40,000	50,000	2,000	15,000	7,500	150,000	3,000	25,000
Idaho	79,000	31,000	2,000	211,000	11,500	49,000	17,000	63,000
Kootenai	32,000	.....	1,100	16,000	1,400	250,000	28,000	96,000
Latah	82,000	4,770	2,500	887,000	2,200	97,600	40,000	30,000
Lemhi	50,000	.....	500	60,000	10,000	25,000	3,000	20,000
Logan	86,500	8,000	2,000	60,000	10,000	19,000	8,000	15,000
Nez Percés	194,000	21,000	2,000	316,000	61,000	34,000	16,000	16,000
Oneida	119,000	31,000	2,600	300,000	9,000	22,000	9,000	36,000
Owyhee	260,000	230,000	3,000	265,000	20,000	22,000	3,000	24,000
Shoshone	18,000	5,000	1,000	15,000	2,000	280,000	42,000	70,000
Washington	140,000	36,056	2,500	117,200	30,000	30,000	10,000	20,000
Total ..	2,083,350	808,326	47,200	3,655,190	412,350	1,643,850	348,000	572,000

RECAPITULATION.

Cattle, horses, and sheep	\$2,083,350
Wool and pelts	808,326
Hides	47,200
Grain and hay	3,655,190
Fruits and vegetables	412,350
Lumber	1,643,850
Brick	308,000
Other building material	562,000
Total	9,520,176

ADA COUNTY.

Assessment
values.

Improved land patented, 85,560 acres	\$731,795
Value of improvements on above	514,584
Improvements on land not patented, 41,000 acres	204,756
Irrigating canals	26,500
Rocky Mountain Bell Telephone Co.	3,000
Western Union Telegraph Co.	5,173
Silver City Telegraph Co.	1,000
Idaho Central Ry. Co.	46,250
Oregon Short Line Ry. Co.	481,270
Beef cattle, 2,000 head, at \$20	40,000
Thoroughbred bulls, 200 head, at \$50	10,000
Thoroughbred cows, 250 head, at \$30	7,500
Range cattle, 10,940 head	103,180
Thoroughbred horses, 30 head, at \$300	9,000
Graded horses, 100 head, at \$30	3,000
American horses, 7,915 head	229,350
Hogs, 1,195 head, at \$3	3,585
Mules, 160 head, at \$45	7,200
Sheep, 30,000 head, at \$2	60,000
Money, bank stock, and other securities	139,488
Goods, wares, and merchandise	211,836
Other personal property, not enumerated	168,355
Total	3,006,822

The county of Ada occupies a central portion of the western part of the Territory. It is 75 miles in length from north to south, with an average width of 35 miles. The older settlements occupy the valleys, and these valleys are thronged with prosperous people. Their homes are surrounded with orchards and groves, and are sustained by fruitage from

fields producing far in excess of the prairie lands of Illinois. Settlement has but fairly begun upon the uplands, and their adaptability to horticulture is yet under experiment; but the yield of grass and grain is equal to that of the valleys. More than 600,000 acres of excellent land are open to settlement in this county, all of which is still owned by the Government, and subject to entry under the public land laws. Not an acre can be bought without first bringing the land under cultivation. Perhaps 10 per cent. of the land of Ada County is hilly or mountainous. All of the remainder will yet be irrigated by great canals and nourish by their products tens of thousands of people.

The system of irrigating canals already provided is the wonder of all who visit this prosperous county. Small farming communities own canals supplying from ten to one hundred ranches. Sometimes but two or three join in taking out water. The uplands are supplied by canals which cost from \$10,000 to \$80,000. The capital city is provided for by two canals, which send little rivulets through every street and upon every lot in quantities desired by the people. Uncultivated lots and blocks, covered with native sage-brush and bearing all the physical aspects of the desert plains, alternate with lots and blocks upon which water has been applied, where flourish trees and grass, orchards, gardens, and flowers.

The beauty of Boise City, with its wealth of fruit and stately trees, has often been told. Time only adds to its attractiveness. Its annual growth averages 10 per cent. in the number and value of its buildings. Idaho was the first of the Territories to provide itself with a permanent capitol building at its own expense, and the people are well satisfied with their investment. The building and furnishing cost about \$85,000.

West of the capitol is the immense public school building, and on the east is the court-house, both the best public buildings of their kind yet erected in the Territory. Occupying another block is the United States assay office, a solid stone building, erected several years ago at the expense of the United States Government. There is still needed a suitable building for the post-office, with rooms required for the enlarging business of the United States land offices. The United States marshal has quarters at the court-house. A suitable Government building could be erected on one of our main business thoroughfares, adapted to the needs of the postal service and the land department, for about \$40,000, and an appropriation for this purpose should be made at an early day. Other towns in Ada County should not pass unnoticed. The town of Caldwell justly claims honorable mention on account of its extended wholesale and retail trade, its excellent public and private buildings, and the energy with which its thoughtful people push its interests in every direction. Payette is a beautiful village, drawing its support from both agricultural and lumber interests, while Emmett is the busiest of lumber towns.

The statistics of live stock and agricultural products elsewhere given are the best evidence of the strength and varied nature of the resources of Ada County. In the yield of fruit and vegetables Ada County ranks first in the Territory; in hay it ranks second; in grain it ranks third. Perhaps the time is not far distant when Ada will rank first in all these particulars, since the real development of the county has but fairly commenced.

ALTURAS COUNTY.

Assessment
values.

Improved land patented, 12,378 acres	\$28, 198
Value of improvements on above	36, 350
Improvements on land not patented, 9,053 acres	13, 510
Improvements on mining claims	18, 400
Quartz mills, concentrators, etc	52, 300
City and town lots	87, 375
Improvements on city and town lots	169, 707
Saw mills, etc	7, 963
Mining and irrigating ditches	10, 000
Toll roads	2, 000
Western Union Telegraph Co	769
Rocky Mountain Bell Telephone Co	1, 467
Oregon Short Line Rwy. Co.	101, 270
Money, bank shares, and other securities	34, 900
Goods, wares, and merchandise	88, 545
Graded calves, 100 head, at \$27	2, 700
Range stock, 2,394 head, at \$13.13	31, 434
American cows, 272 head, at \$19	5, 168
Graded cows, 12 head, at \$39.16	470
Hogs, 92 head, at \$3.83	353
Graded horses, 7 head, at \$160.71	1, 125
American horses, 1,521 head, at \$28.81	43, 822
Mules, 140 head, at \$38.98	5, 458
Oxen, 44 head, at \$34.09	1, 500
Sheep, 6,277 head, at \$1.50	9, 416
Other personal property, not enumerated	57, 405
Total	811, 605

In the report made by my predecessor last year Alturas was given the first place on the list in both population and taxable property, and second to one county only in the production of valuable metals.

In February last, and during the closing hours of the legislature, the counties of Logan and Elmore were created out of the county of Alturas, thereby greatly reducing the area, population, and assessable property of this county. The validity of this act of the legislature was questioned by parties adversely interested. They claimed that the sixty days fixed by statute for the duration of the legislative session had expired before the passage of the bill, and other irregularities were alleged. Application for a writ of mandamus was made to the supreme court of the Territory and denied on the ground of want of jurisdiction. The case was then taken on appeal to the Supreme Court of the United States, where it is now pending. The organization and actual separation of the two new counties, Logan and Elmore, has in the meantime been fully completed.

This county has also suffered seriously from other causes. The business portion of the city of Hailey, the county seat, was reduced to ashes on the night of July 1 last, thereby sustaining a loss of nearly \$500,000. Forest fires have devastated large tracts of its most valuable timber, and the improvements on many mining properties were consumed. Amid all these reverses the people have retained their indomitable courage. The burned district of Hailey is being rapidly covered with fire-proof brick buildings. A better fire department and increased supply of water is secured, and the work of beautifying its streets and avenues has not ceased. Contiguous to the Hot Springs, 2 miles distant from Hailey, \$100,000 have been expended in building a spacious hotel containing great walled bath-rooms, and surrounded by parks and drives. Each of the choice valleys of this county contains one or many well watered farms under the management of a class of agriculturists of unusual intelligence and enterprise.

During the year 1888 several of the most important mines of this county ceased to be productive, and many proclaimed that this district had seen its best days. During the last winter and spring a considerable number left for new fields; but those who understood best the mineral resources of this county remained steadfast in the faith that they were beginning rather than ending the production of the precious metals here. It is now stated that there are fifty mines paying a liberal profit to their owners. While there have been periods in the history of this county when the total output was greater than now, so great a number of profitable mines has never been reached before, and the prospect for a greatly increased yield the coming year is cheering in the highest degree.

The town of Ketchum remains the great distributing point for the vast mining region to the northwest, and one of the principal shipping points for all of Custer County and the districts north and northeast. Many causes have contributed to temporarily retard the growth of the place, yet its citizens have just completed, at heavy expense, a system of water works unexcelled in our entire Territory.

The incomplete returns given in the table of agricultural products show that Alturas County will not rest its fame upon its mines alone, but that its yield of grain and vegetables is highly creditable. The county ranks high in the business of stock-raising, and excels in the proportion of the better grades.

BEAR LAKE COUNTY.		Assessment values.
Improved land patented, 15,000 acres		\$80,000
Value of improvements on above		66,850
Land unpatented, 17,000 acres.....		50,202
Improvements on above.....		77,993
Oregon Short Line Rwy. Co.....		295,620
Western Union Telegraph Co.....		2,267
Goods, wares and merchandise.....		57,970
Range cattle, 9,990 head, at \$10.54.....		105,346
American horses, 210 head, at \$60.....		12,600
Spanish horses, 3,057 head, at \$23.32.....		71,303
Mules, 30 head, at \$40.....		1,200
Sheep, 1,240 head, at \$1.82.....		2,258
Hogs, 583 head.....		1,512
Other personal property, not enumerated.....		36,173
Total		861,294

The statistics of population, agricultural products, live-stock, and railway shipments, elsewhere given in this report, speak volumes for the fertility of the soil and the industry of the people of this county. Add to this the fact that Bear Lake is the smallest of the counties of Idaho; that a large proportion of its lands lie at an elevation of more than 6,000 feet above the level of the sea, and a more complete idea would be obtained of the industry and enterprise of its inhabitants. The Mormon people have built at Paris a tabernacle which is said to have cost \$50,000. They have a well furnished court-house which cost \$15,000. There are in the county two Presbyterian churches, not large, but models of symmetry and good taste; there are three large public halls and seventeen common-school houses which cost on an average \$1,000 each.

The county contains eight towns and villages with population as follows: Paris, 1,500; Montpelier, 1,200; Bloomington, 1,000; St. Charles, 1,000; Fish Haven, 200; Liberty, 200; Bennington, 400; Georgetown, 400.

The county takes its name from Bear Lake, one of the largest bodies

of water in the Territory. It is here that it is proposed to establish the first of the great reservoirs designed for the storage of water, to be used during the season for purposes of irrigation. As rich and fertile as is this little county, it is said that 40,000 acres of its best lands still lie useless for want of water; and it may reasonably be expected that an adequate system of water storage and water distribution will result in adding one hundred per cent. to the already large agricultural product of this county.

The main railroad business of this county is transacted at Montpelier. The town constitutes a railway freight division, and many railway employes are building permanent homes in this beautiful village. They are a thrifty and intelligent class of citizens. It is probable that the railway company will greatly enlarge its shops and engine-house at this point; a newspaper has been recently established and the educational facilities of the place improved. I am indebted to Hon. J. C. Rich for valuable information relating to this county.

BINGHAM COUNTY.

	Assessment values.
Improved lands patented, 75,482 acres.	\$152,098
Improvements on above	96,988
Improvements on unpatented lands	90,335
Town lots	30,455
Improvements on the above	120,945
Western Union Telegraph Co	23,696
Quartz mills	15,000
Improvements on mining claims	4,000
Oregon Short Line Rwy. Co	379,015
Utah and Northern Rwy	1,119,630
Money, bank-stock, and other securities	29,500
25,091 range cattle, at \$11.90 per head	298,810
2,040 American cows, at \$15 per head	30,600
35 oxen, at \$20 per head	700
4 thoroughbred horses, at \$200 per head	800
37 grade horses, at \$100 per head	3,700
8,139 native horses, at \$23.93 per head	194,793
7 jacks and jennies, at \$160 per head	1,120
102 mules, at \$40 per head	4,080
780 hogs, at \$4.14 per head	3,229
Goods, wares, and merchandise	129,165
3,772 sheep, at \$1.50 per head	5,664
Other personal property not enumerated	129,384
	2,863,707

The county of Bingham covers 165 miles from north to south and 88 miles from east to west. It ranks first in population among the counties of Idaho, and second in taxable wealth. It embraces within its limits a variety of soil, climate, scenery, employments, and products equal to any other. It is an empire in extent and possibilities; it is a State in its resources and capacities. To write of it or describe it is a task which should have the help of many minds and months of time. Neither of these are at our service, and this inadequate review can only show our good will; it can not do justice to the county or its people.

A rapid description will naturally look upon the county in triplicate—its southeast, or great mineral and grazing belt; its center, or chief agricultural section; its vast north, with its great forests, its unrivaled natural scenery, and its multitudinous farms. The population of this county may be roughly guessed or estimated; the actual number which, within the last three years, have flocked into its valleys and spread over its plains will not be known till the patient census-taker seeks them out.

Southeast Bingham has for its central business point the town of Soda Springs. This is a city of hotels; the cool resort of health seekers; the center of the most valuable, the most curious, the rarest group of mineral springs known to geographical lore. It is also the center of a body of grazing and agricultural lands, which is winning the attention of thousands of home-seekers, and where the settlers are solidly prosperous. To the north is the Cariboo placer mining district. In its wild fastnesses many shrewd miners are exploring, and if half is true which is told by prospectors there is untold wealth awaiting capitalists of courage and knowledge, who will use both in this wonderful region.

Swinging westward and northward, the towns of Pocatello and Blackfoot are reached. Two years ago there were at Pocatello possibly 200 persons; one year ago there were 500; at this date estimates vary from 1,500 to 2,500. Here are located the most extensive car-shops between Omaha and the Pacific coast, and around the town are grazing lands, rapid streams, and hills tempting to the hunter and prospector. Where so recently but a handful of railway employes held possession, there is now a national bank, an excellent newspaper, mammoth general stores, good hotels, churches, schools, and all the smaller trades and shops usually accompanying the march of civilization. Just north of Pocatello, and beyond the Indian reservation, is Blackfoot, the county seat. Here is a well-built and well-furnished county court-house; here is the Idaho insane asylum; the United States land offices; a private bank; several business houses and comfortable dwellings; a good school-house, and two substantial brick churches; and from the railway depot there load and depart daily great wagon trains of freight for the mining districts of central Idaho. Within a radius of 20 miles of Blackfoot hundreds of farmers are cultivating valuable ranches, supplied by water from costly canals, where five years ago the coyote was the only live stock and sage-brush the only vegetation.

Twenty-five miles northward is the town of Eagle Rock. Here, in a great stone building, is said to be the largest retail merchandise store in Idaho; here is being built a flouring-mill with the latest improved machinery; here is a bank; a valuable system of city water-works, and about twenty-five firms engaged in various branches of industry. Eagle Rock claims also to rank first in the Territory in the number of agricultural implements sold. From this point the Union Pacific Railway is expected to extend a branch line along the Snake River, in a northeast course to the National Park, reaching on its course the settlements at Rexburg, Menan, Egin, St. Anthony, and other points, where the growth is already marvelous, and where the increase in population shows no signs of abatement.

Northward still is the village of Camas, an important shipping point for the southern portion of Lemhi County; and still further north is Beaver Cañon, which for six years has held first rank in the manufacture and shipment of lumber. Near each of these towns are abundant streams which nourish the numerous farms. Of all the counties dependent upon irrigation, none excels Bingham in the number and importance of the running streams, and in none is the general system of irrigation surpassed. For three successive years the assessment roll of Bingham County has grown at the rate of \$300,000 per annum; and this great increase will doubtless be largely exceeded in 1890.

The estimate given in the accompanying tables, showing the agricultural and other products of Bingham County, are from very imperfect data, and probably are much below the facts; still it is well known

that 20 per cent. of the population has recently come in, and can hardly as yet be counted among the producers.

Should the present ratio of increase continue, it is probable that it will be necessary to again divide this county immediately after the admission of Idaho into the Union.

BOISÉ COUNTY.

Assessment
values.

Improved land patented, 11,505 acres	\$41,515.00
Improvements on above	52,250.00
Lands unpatented, 27,840 acres, improvements	73,725.00
Improvements on mining claims	8,670.00
13 quartz mills	62,050.00
Mining ditches	47,345.00
Irrigating ditches	2,550.00
Rocky Mountain Bell Telephone Co.	1,400.00
Toll-roads	5,300.00
Money, bonds, and other securities	61,961.26
158 beef cattle, at \$23.92 per head	3,790.00
5,772 range cattle, at \$13.69 per head	78,995.00
738 American cows, at \$25 per head	18,450.00
Goods, wares, and merchandise	63,394.00
694 hogs, at \$4.05 per head	2,811.00
29 thorough-breds, at \$114.48 per head	3,320.00
2,979 American horses, at \$24.89 per head	74,170.00
Lumber	16,003.50
Saw-mills	5,450.00
71 mules, at \$41.76 per head	2,965.00
38 oxen, at \$27.76 per head	1,055.00
2,954 sheep, at \$2 per head	5,908.00
Other personal property	85,363.37
Total	718,441.13

Boisé County is mainly devoted to the mining industries, both placer and quartz. The placers have been worked with great success some twenty-six years, and have been very productive. As water was very costly in the early history of the various camps, only the best grounds were worked, leaving in the various creeks much valuable ground, which subsequently was carried from the adjoining hills with many feet of sand and gravel. These unworked grounds have lain for years and can be worked only by bed-rock flumes, requiring large outlays of money. Those best competent to form reliable judgments are of the opinion that vast wealth yet remains in the various creeks of the celebrated Boisé Basin; and within the last year steps have been taken to put in such flumes in Moore's, Elk, and Grimes's Creeks. For the past year little has been done in the way of placer mining on account of the dryness of the season, many of the best claims not being able to wet ground, and others only for a few days. But while the placers have failed attention has been turned to quartz more than ever. The Gold Hill Mining and Milling Company, at Quartzburgh, have steadily worked their valuable mines during the last year with great success.

The Elmira Company, at Banner, have had a most successful year and are producing from \$1,000 to \$1,500 per day of silver at the present, and are preparing during the coming year to build new works on a larger scale with all modern appliances. This is now one of the most valuable properties in the Territory.

The celebrated Elkhorn has been a successful producer of gold during the past year, and is now promising a development that will in the coming year call for a new and enlarged mill. It is now bonded to eastern capitalists, and several properties in its neighborhood have already gone into similar hands.

The Washington mine, some 10 miles east of Idaho City, has shown such prospects of both gold and silver as to warrant the construction of a 10-stamp gold-quartz mill, now nearly ready to begin work. A silver-mill will be built in the near future.

A group of mines in the range of mountains near Quartzburgh—among them the Ebenezer—have recently been bonded to foreign capitalists.

Eastern capitalists have on the ground an expert, W. J. Smart, testing and bonding mines, a large number of which are now being worked with very flattering prospects.

As a result of this activity in quartz, a great amount of prospecting is being done by men of small means, who are ready to sell or bond their prospects, and in this way many valuable mines are being developed. It is now demonstrated that Boise County is rich in gold and silver quartz near to timber and water, and it is claimed that near Idaho City a tin mine has been discovered.

At Graham last year several hundred thousand dollars were expended in building mills, assay office, etc., and in developing several silver mines. Through some mismanagement an English company who made the expenditure have come to grief—temporarily only it is hoped.

The outlook for mining interest in the county is most cheering.

While mining at present is the leading, it is not the only industry of the county. Generally a rugged and mountainous county, it contains numerous streams along which are rich bottom-lands, easily irrigated and very productive when cultivated. Some of these spread out into valleys of considerable extent, and are generally alluvial deposits of great depth and richness, producing wheat, oats, barley, the more hardy vegetables, fruits, and hay, and grasses in abundance.

Beginning with Garden Valley, some 10 or 12 miles long and from 2 to 3 miles in width, we have a garden indeed. This valley lies in the forks of the main Payette River and one of its branches, and is all held and cultivated by thrifty and well-to-do farmers. Below, on the main Payette at Jerusalem and Horse Shoe Bend, and on Squaw Creek, a tributary of the Payette, are fine agricultural lands, producing in addition to all kinds of grains fruits of all kinds, and many of the less hardy vegetables, as tomatoes, melons, and corn.

Long Valley, the largest in the county, is situated in the northwest part of the county, and is some 60 to 70 miles long and from 8 to 12 miles in width, including Round Valley. It is situated on both sides of a branch of the Payette, heading in the Payette Lakes, a chain of long, narrow, and deep lakes in the summit of a mountain range some 4,500 feet above the sea-level. About the valley on all sides are forests abounding in all sorts of game and penetrated by innumerable mountain streams abounding in great variety of fish, and furnish water for irrigation and water-power for machinery. The main lake in this chain of lakes abounds in the celebrated redfish.

This valley formerly thought to be too cold for anything but a summer range for the herdmen of cattle and horses, has proven to be adapted to the raising of nearly all kinds of grain and the more hardy vegetables, as well as of nearly all the grasses, and thousands of fruit-trees are being planted in the belief that it will produce nearly all kinds of the hardy varieties of fruits.

The valley is rapidly filling up with settlers, having doubled within the last year. The school census in July shows 221 children of school age and 4 school districts. There are 2 stores, 2 saw-mills, and the usual accompaniments of a new settlement. The valley would soon double its population were it surveyed.

The county of Boisé is one of the best timbered counties in the Territory and contributes most of the supply of wood and timber to the adjoining county of Ada. This with the necessary consumption of the mines is a heavy draft upon the forests of the county, but worst of all vast forest fires have raged for weeks, despite the utmost efforts of the people to stay them. Vast quantities of timber have been killed, large quantities of cord-wood burned, and valuable mining and farming properties imperiled. It is well worth the attention of the General Government, as well as of the local governments, to use all means practicable to stay the frequent occurrence of these fires, as their oft repetition is certain to produce disastrous climatic changes. Once these forests are destroyed the fall of snow and rain is more or less affected, and if not materially lessened passes off in floods in the early season, and leaves those dependent on water for mining and irrigation later in the season destitute.

CASSIA COUNTY.

	Assessment values.
Improved lands patented, 45,285 acres	\$159,214
Value of improvements on above	48,265
Improvements on land not patented, 42,380 acres	38,560
Improvements on mining claims	2,000
Quartz mills	5,000
Town lots and improvements	16,190
Mining and irrigating ditches	3,261
Money, bank shares, and other securities	12,300
Ferry-boats	1,100
Grist-mills	6,000
Saw-mills	1,950
Goods, wares, and merchandise	19,376
Calves, 248 head	1,772
Range cattle, 26,640 head	346,320
Thoroughbred cows, 10 head	1,200
American cows, 710 head	14,215
Graded colts, 110 head	2,395
Angora goats, 2,530 head	5,075
Hogs, 400 head	1,341
Colts, 96 head	1,169
Thoroughbred horses, 12 head	2,900
Graded horses, 41 head	4,830
American horses, 624 head	38,960
Mixed breed horses, 5,663 head	104,835
Jacks and jennies, 2 head	600
Mules, 193 head	5,710
Oxen, 112 head	2,795
Sheep, 3,607 head	72,140
Other personal property, not enumerated	29,138
Total	948,611

From the earliest settlement of this county its growth has been steady and uniform. Its irrigating canals have been planned, built, and extended by far-sighted pioneers. Year by year the acreage of improved land redeemed from the desert by water conducted from distant springs and streams has been largely increased, and the refreshed and invigorated soil has made abundant return to the farmer. Still, more than 1,000,000 acres wait for like relief. In no part of our Territory is the extension of the reservoir and canal system, under the direction of the United States Government, more largely watched or more ardently desired than in Cassia, for this extension and development can not fail to place this county in the front rank of population and wealth.

Attempts have been made, in a desultory way, to develop the mineral resources of this county, and indications of gold, silver, lead, and other deposits are found all over the mountains. Assays are frequently

made running away up into the thousands, but work has not been prosecuted to any depth, and we have no reliable information as to what may be lying underneath. The county will certainly justify extensive and thorough prospecting, for these numerous rich spurs must certainly lead to one or more great central deposits.

Placer mines are the most promising for immediate results. This county has a frontage on Snake River of over 200 miles, and the sands of this stream are rich in gold through its entire length. Sanguine miners state that with abundant water, having sufficient head and properly worked, there would be enough taken out of these deposits to pay the national debt. While this statement is doubtless extravagant, still there is foundation for large estimates.

This county also contains extensive deposits of the very best fire-proof mineral paint, large deposits of fine marble, sandstone, granite, mica, and many indications of abundance of coal.

There is a fair and steady demand for intelligent labor among the ranch and stock men. Reliable herders receive \$35 to \$40 per month; farm hands, \$25 to \$30 per month; during haying \$2 per day is paid.

At Albion is situated a court-house which cost \$3,500; jail, \$1,500; public-school building, \$3,500. Other valuable buildings are planned, and the growth of the town is most gratifying.

With grazing lands so extensive and rich still open and free to all, and meadows so abundant, dairy farming ought to be developed to much greater extent, and if intelligently conducted it would prove most profitable.

I am greatly indebted to Messrs. T. A. Starrh and Frank Riblett for valuable information.

CUSTER COUNTY.

	Assessment values.
Improvements on land not patented, 23,675 acres.....	\$203,731
Three quartz mills.....	51,000
Two concentrators.....	26,000
Three smelters.....	16,000
Mining ditches.....	5,100
Irrigating ditches.....	9,390
Toll road.....	2,000
Money, bonds, and other securities.....	74,170
Goods, wares, and merchandise.....	108,375
Range cattle, 11,811 head, at \$12.....	141,732
Thoroughbred cows, 85 head, at \$40.....	3,400
American cows, 176 head, at \$25.....	4,400
Hogs, 200 head, at \$5.....	1,000
Thoroughbred horses, 4 head, at \$375.....	1,500
American horses, 186 head, at \$80.....	14,880
Mixed horses, 2,853 head, at \$26.67.....	76,115
Mules, 341 head, at \$40.....	13,640
Imported sheep, 58 head, at \$5.....	290
Sheep, 20,336 head, at \$1.50.....	30,504
Other personal property, not enumerated.....	99,573
Total.....	882,800

MINERAL RESOURCES.

East Fork or Germania Basin.—The principal mines are the Germania, Arctic, Idaho, Tyrolise, Croesus, Bible Back, and others. The mines are in limestone or porphyry, and constant producers of ores running about 12 ounces silver, 40 per cent. lead, with \$20 per ton gold.

Squaw Creek has several good mines located in limestone, carrying a high per cent. of lead and 60 ounces silver per ton. Among these are

the Cinnabar, Standard, Ready-Cash, Red Bird, Saturday, and Mollie D.

The Yankee Fork mining district has a great many mines noted for their large production of gold and silver ores. The ores of this camp do not carry much lead, but make up for this in gold and silver. The principal mines are the Charles Dickens, Morrison, Lucky Boy, Badger, Custer, Unknown, Summit, Continental, Fourth July, Daniel O'Connell, Juliet, Montana, Charles Wayne, Anna, and The Whale.

Bayhorse mining district.—The lead mines of this district are located in a limestone formation, and are among the oldest in the county. The leading mines are the Beardsley, Excelsior, Hood, Good Enough, Keno, Jarvis, Barton, Homestake, Dumpby, Riverview, and Hoosier. These and others have produced immense amounts of ore since their discovery.

The Ramshorn, Sky Lark, Silver Wing, Utah Boy, Post Boy, and others are high grade ore, averaging about 100 ounces silver per ton, and about 35 per cent. iron.

Custer mining district.—The mines in this district are principally located in limestone formation; in some instances carry 40 per cent. iron and 50 ounces silver, with no lead; in other cases 50 per cent. lead and 60 ounces silver.

The Redemption, Silver Bell, I Know, and You Know form a group in the slate formation identical with the Ramshorn and Sky Lark. The leading mines in the lime formation are the Ella, Overland, Climax, Faithful Boy, Boss, Rob Roy, and Crown, with other locations not yet developed to a great extent.

The Slate Creek and Boulder Creek locations, 18 miles southwest from Clayton, are generally in black limestone, high grade in lead and silver, easily worked by drifts on veins, and are constant producers—the Livingstone, Little Falls, Pyramorphite, Silver Rule, Carbonate, Hughs, Empire, and others.

Lost River mining district.—The mines are in limestone, slate, and porphyry. The mineral belt is 15 miles in width and 40 miles in length. Many claims have been located, but are practically undeveloped as yet.

There is one smelter in the district, located near Houston; capacity, 30 per day. Many of the mines are very rich in copper; others in lead and silver.

Sea-Foam.—Crossing the western part of the county is one of the great mineral belts of the West. It is at least 50 miles in width and 100 miles in length. Hundreds of locations have been made, from which are being shipped large quantities of high-grade gold and silver ore. As yet there are no reduction works in the district, and the ores are freighted on pack animals about 80 miles to Ketchum. It will not be difficult to construct wagon roads into the heart of this district, which mining men of experience believe will in time be one of the greatest mining districts in the world.

AGRICULTURE.

There are three fine agricultural valleys in this county, viz, Lost River, Pahsamari, and Round Valley.

Lost River Valley is in the southern part of the county, and contains several hundred thousand acres of fine farming and grazing land. Wheat, oats, barley, and all kinds of vegetables are successfully grown. There are about 8,000 acres under cultivation, and probably 50,000 acres more that can be successfully cultivated. Large herds of sheep, cattle, and horses are grazed on the unoccupied valley lands and on the mount-

ain slopes. This valley is about 75 miles in length and will average about 6 miles in width. About two-thirds of the valley is in Custer County.

The Pahsamari Valley is in the northwestern part of the county; is one of the finest grazing and farm valleys in the West in proportion to its area. It has about 150 inhabitants, is 40 miles in length, and will average 10 miles in width. Grain and hay are raised in abundance. Vegetables of all kinds are also produced. Thousands of sheep, horses, and cattle are grazed, winter and summer, without feeding. There are about 10,000 acres under cultivation.

Round Valley is in the central part of the county, and has about 6,000 acres under cultivation. It is about 10 miles in length, the Salmon River flowing through the center. Everything that can be produced in the other valleys of the county is produced here with great success. Challis, the county seat, is situated in this valley. The population of the valley about 1,200. A home market is found for everything produced in this county.

There are no surveyed lands in this county, and this is a great hindrance to the progress of our people. Many of our farmers have resided on their lands for ten years, and in some instances fifteen. They would make better and more extensive improvements on their farms if they knew where their lines would be when surveyed. The county and Territory are deprived of a large revenue by the failure to survey these lands, as they are neither assessed nor taxed until Government title is secured.

ELMORE COUNTY.

	Assessment values.
Improved lands patented, 9,951 acres.....	\$72,356.50
Value of improvements on above	20,975.00
Improvements on land not patented, 14,007 acres.....	35,440.00
Thirty-six mining claims, 589 acres	8,646.70
Western Union Telegraph Company	3,233.50
Rocky Bar and Mountain Home Telegraph Company.....	1,350.00
Eleven quartz mills.....	128,945.00
One concentrator	250.00
Eight mining ditches	5,996.00
Improvements on city and town lots.....	92,490.00
Oregon Short Line Railway.....	420,355.00
Money and other securities.....	5,466.00
Range cattle, 11,929 head	142,638.00
Goods, wares, and merchandise	54,037.25
American horses, 2,365 head	66,493.00
Sheep, 28,660 head	57,778.00
Hogs, 138 head	666.00
Other personal property, not enumerated	44,655.50
Total.....	1 161,771.45

This county was created by act of the legislature at its last session, out of the county of Alturas. The legality of the act has been called in question, and the issue is now before the Supreme Court of the United States. The appeal to the Supreme Court, however, did not act as a stay of proceedings, and my predecessor commissioned proper county officers. The organization of Elmore County is complete, though no adjustment of its proportion of the debt of Alturas County has been made.

The sources of wealth in Elmore County are fourfold, quartz-mining, placer-mining, forestry, and stock-raising. Near the northern boundary of this county is the town of Atlanta, the oldest quartz-mining town of southern Idaho. Twenty years ago, unusually large investments of capital in machinery and mining development were made at this place,

and for a time the output of gold was enormous. Why these great mines have remained unopened for half a generation is not known to the public. Disagreement and litigation among owners are said to be part of the causes of this unfortunate state of affairs. The place is also quite difficult of access, and mining operations here require very large capital. The best informed believe that the time is not far distant when the famous mines of Atlanta will reopen their treasures.

Sixteen miles to the south of Atlanta and 60 miles north of Mountain Home is Rocky Bar, the present county seat. At or near this place about 20 mines are in course of development. Expensive mills and machinery have been introduced, and strong companies control the field. During the year 1888, the yield of gold reached over half a million dollars and it was thought the yield of this year would greatly exceed this, but early in March both mill and mine owners became convinced that there would not be sufficient water for mill purposes this season. Hence their operative forces were reduced, and development work only continued by a limited number of men. The same causes have led to the temporary abandonment of mining operations in parts of the new Pine Grove district. But the companies owning the leading properties in both the Rocky Bar and Pine Grove mining districts are well supplied with capital and ably managed, and there is every reason to believe that after the fall of the snows of the coming winter, the operation of mines and mills will be continued on the largest scale, and a general revival of business will certainly follow.

The low water in the streams this season has exposed to view the extraordinary riches of the sands of Boise and Snake Rivers and their tributaries, and preparations are making for larger operations in this direction. As great as have been the profits of placer mining in this section in the past, the prospect for brilliant returns is brighter than ever before.

Heretofore the profits of mining have drawn attention away from stock-raising and farming; irrigating canals have not been constructed to an extent equal to other counties, but public attention is now awakened in this direction. Shipments from Mountain Home show conclusively that the production of live stock and transactions in wool, hides, and grain are rapidly increasing. Many irrigating ditches are assuming the proportion of extensive canals, the older farmers are finding to their own gratification that orchards can be successfully cultivated. Indeed this is an era of wise beginnings of great enterprises in Elmore County.

The great pine forests of this county have as yet been lightly touched by the hand of man. Local needs have kept six saw mills in operation and about 1,000,000 feet of lumber have been manufactured. When the county government shall be able to greatly improve the highways this industry will be rapidly developed. The towns of Rocky Bar, Mountain Home, and Glenn's Ferry are improving in all directions. The latter town is a railroad division, and railway shops and engine houses are in course of erection. Both public and private buildings in each of these towns are increasing in number and value, and the educational system is being developed. Few counties in Idaho offer greater inducements to new settlers at this time.

I am indebted to Hon. E. C. Helfrich, of Mountain Home, and A. G. Smith, of Rocky Bar, for valuable information.

IDAHO COUNTY.

	Assessment values.
Improved lands, patented, 71,736 acres.....	\$222,728
Value of improvements on above	89,910
Improvements on land not patented, 45,037 acres	36,044
Improvements on mining claims	16,505
Quartz mills	2,650
Mining ditches.....	19,750
Money, bonds, and securities	49,838
Flouring mills	3,600
Saw-mills.....	3,875
One wire bridge.....	2,000
Ferry-boat.....	600
Goods, wares, and merchandise.....	59,591
Thoroughbred bulls, 40 head, at \$58.87.....	2,355
Range cattle, 13,583 head, at \$14.87.....	202,114
Thoroughbred cows, 32 head, at \$47.50	1,550
Native cows, 836 head, at \$19.98	16,705
Hogs, 3,302 head, at \$2.69.....	8,812
Thoroughbred horses, 90 head, at \$104.61	9,415
Native horses, 8,418 head, at \$18.04	151,918
Jack, 1 head	50
Mules, 92 head, at \$21.47.....	1,976
Sheep, 6,568 head, at \$1	6,568
Oxen, 12 head, at \$24.16.....	290
Other personal property, not enumerated	68,008
Total	976,852

Hon. A. F. Parker writes :

The western base of Idaho County is washed by the waters of Snake River, and it is bounded on the east by the Bitter Root Divide, forming the territorial boundary line between Idaho and Montana, a distance of nearly 200 miles from east to west. From north to south it covers a nearly equal distance. Through the center of this vast area courses the Salmon River, draining with its multitudinous tributaries the largest and least known scope of mineral country on the Pacific slope. Through its northern limits flows the Clearwater, draining on the western slope of the Bitter Root Mountains the finest forests of timber on the continent. Its principal agricultural settlement is the great Camas prairie, an elevated plateau forming a low divide between the Salmon and Clearwater Rivers, which at one point are only thirty miles apart. Throughout the region drained by these rivers are vast areas of unexplored country whose surrounding characteristics indicate an extensive zone containing large deposits of the royal metals.

In the heart of the surrounding mountains are the famous placer mines of Oro Fino, Elk City, Florence, Warrens, and Salmon Rivers, names which, in the early '60s electrified the mining world with their marvelous output of precious metal, and paved the way for the establishment of the more enduring industries of cattle raising and agriculture which now constitute the bulk of its wealth. These old mining camps are still extensively worked, and are still supplied by means of pack trains which average in distance traveled 10 miles per day. As the distance from the base of supplies is 150 miles, it can be easily seen that only the richest ground can stand the great expense of this primitive method of transportation.

The great need of Idaho County is wagon roads and railroads, and, with the cheaper transportation which these handmaids of civilization would bring, this scantily-settled county would afford sustenance to a very large mining population, which would work the numerous mining regions where gold is known to exist in paying quantities. With the development which railroads bring, ten thousand men would find profitable employment in mining the golden sands from the rich gravel-bars which line the banks and tributaries of Salmon River from its source to its mouth. The richer claims on this golden stream are even now worked at a more or less variable profit, and good prospects are being constantly found. Where wing-dams have been constructed as high as \$2,000 have been taken out in twenty-four hours. Gold is found in nearly all the tributaries of the Salmon. They have never yet been carefully prospected for the wealth they contain, for even the most reckless of enterprising miners begins to study the situation when freight is from 5 to 15 cents per pound.

There are hundreds of acres of ground in all the old placer-mining camps which could be profitably worked if the country were made accessible by wagon roads; and in all the adjacent country on both sides of the Clearwater and Salmon Rivers are great quartz districts, all lying just as nature left them and awaiting cheaper trans-

portation to be developed into great, wealthy, and productive mining camps. The whole of this great interior in the heart of Idaho is practically a *terra incognita* of wild and forbidding aspect, and its development will be necessarily slow, from the fact that it is isolated and apart from any of the great traveled thoroughfares.

The placer-mining industry still employs a large population, as may be gathered from the fact that Idaho County leads the list of gold-dust-producing counties in the Territory. Placer mining has hitherto almost exclusively engaged the attention of its mining population, but within the past few months important quartz discoveries have been made at several points within the area of its unprospected mountain ranges. The Bitter Root Range, forming the eastern boundary of the county and Territory, is, in reality, the true backbone of the continent, and it has been less prospected than any other range, although enough is known of its character and formation to justify the belief that it is seamed with ribs and veins of gold and silver bearing quartz. The Salmon River Mountains also afford an inviting field for exploration, for the range has scarcely been touched by the pick of the prospector for quartz, and placer mining has been confined to the river bars and the small basins tributary to the main river. The larger forks of the Salmon River are all an unknown country, that can not but be rich in mineral wealth, from the fact that it is the source from whence the gold of the placer camps was derived. In Warren's diggings the quartz interests are already assuming large proportions, and ten stamp batteries, with furnaces and complete reduction apparatus, as well as several arrastras, are kept steadily running on high-grade ore.

KOOTENAI COUNTY.

	Assessment values.
Improved lands patented, 91,215 acres.....	\$129,155.00
Improvements on the above.....	18,470.00
Land unpatented, 30,880 acres.....	
Improvements.....	45,475.00
City and town lots.....	142,975.00
Improvements.....	39,055.00
Western Union Telegraph Co.....	9,950.00
Sampler.....	1,500.00
Cœur d'Alene Rwy and Navigation Co.....	10,500.00
Spokane Falls and Idaho Rwy Co.....	42,250.00
Toll roads.....	6,500.00
Rathdrum water-works.....	500.00
Money and other securities.....	6,914.00
Shingle and saw mills.....	17,225.00
Barges and hulks.....	1,780.00
Steamers, etc.....	30,450.00
Railroad rolling-stock.....	83,828.57
Limekilns.....	800.00
Goods, wares, and merchandise.....	45,949.00
1,523 range cattle, at \$12.22 per head.....	18,815.00
2 thoroughbred bulls, at \$75 per head.....	150.00
140 colts, at \$19.17 per head.....	2,685.00
4 thoroughbred horses, at \$287.50 per head.....	1,150.00
257 graded horses, at \$50.88 per head.....	13,100.00
183 American horses, at \$84.58 per head.....	15,480.00
398 ponies, at \$24.42 per head.....	9,720.00
55 mules, at \$57.18 per head.....	3,145.00
55 oxen, at \$46.72 per head.....	2,570.00
20 sheep, at \$1.25 per head.....	25.00
249 hogs, at \$5.12 per head.....	1,173.00
1,057 cattle, at \$25 per head.....	26,425.00
Personal property not enumerated.....	60,885.00
Total.....	788,599.57

Kootenai is the northernmost county of Idaho, forming the extreme end of what is called the "Panhandle." It is nearly 200 miles long and about 90 miles wide. Ready means of communication with the outside world is furnished by the Northern Pacific Railroad, which traverses the county from east to west. The products consist of vegetables of every description, cereals, and excellent apples and pears. Here are large bodies of fir, tamarack, and pine. Of the latter hundreds of car loads are every year shipped east and west to less favored sections in Montana and Washington.

"A prophet is not without honor save in his own country" will apply equally well to a region of wonderful resources as to a person. Good water, rich mines, fine timber, great water-power, temperate climate, and the best of agricultural land are the characteristics of this county; yet few Eastern people are aware that such a favored region exists in the far-away Northwest.

Where land is as cheap as the wind that blows,
And gold in every rivulet flows.

Not only is this a remarkable region of silver and gold, but the immense forests of fir, tamarack, and pine will furnish lumber for ages to come. Then there are the beautiful lakes Pend d'Oreille, Cœur d'Alene, Hayden, Fish, Spirit, and numerous others, all filled with delicious trout, and towering mountains on which graze countless herds of cariboo, deer, elk, and mountain goat. Brooks of sparkling ice-cold water go on and on to the big Columbia, and finally add their portion to the Pacific Ocean.

The public are generally familiar with the immense output of placer gold from the Cœur d'Alene country in 1884, 1885, 1886, 1887 and 1888, and still later the thousands upon thousands of tons of high-grade silver ore from the quartz leads of that district, yet they do not know that in the northern part of Kootenai County there is a placer region which has for over twenty years yielded golden sands in paying quantities. Sullivan Creek, the Kaniskee Lake country, and the whole Pend d'Oreille region may be instanced as placer districts which have yielded thousands in the past, and are still adding their wealth to the prospector's buckskin purse.

Then the great quartz belt, the like of which the world has never seen, crops out at irregular intervals in Kootenai County and even extends into the British possessions. It appears in the Webber group, Jumbo, Eagle, and other properties around Chloride, and the Homestake, in Granite Creek district. Then it disappears beneath the Pend d'Oreille Lake, and finally crops out again 6 miles north of Hope. Next we find it on the Yak, and there it goes on grander, stronger, richer, until it reaches the big silver leads of the Kootenai Mining and Smelting Company.

There is no more healthful region in Idaho. Streams, lakes, and mountains combine to make natural scenery of unrivaled beauty. Sites for homes of the greatest loveliness and comfort are open alike to rich and poor. New settlers are constantly coming in, yet still there is room.

There are as yet few valuable public buildings; but the county is new, and the enterprising settlers are gradually providing schools and other accessories of the best civilization.

I am indebted to Robert S. Bragaw and M. W. Musgrove, of this county, for valuable information.

LATAH COUNTY.

	Assessment values.
Improved land patented, 99,527 acres	\$821, 084
Improvements on above	183, 170
Land unpatented	151, 707
Improvements	138, 417
Western Union Telegraph lines.....	150
Oregon Railway and Navigation Co.....	23, 391
Spokane and Palouse Rwy. Co.....	10, 725
Money and other securities	75, 355
1,181 two-year-old cattle	10, 629
2,145 calves	12, 630
127 beef cattle	2, 005

	Assessment values.
1,085 range cattle.....	13,025
70 thoroughbred bulls.....	1,700
7 thoroughbred cows.....	325
2,623 American cows.....	39,340
8 graded bulls.....	240
7,166 cows (native).....	79,890
Goods, wares, and merchandise.....	170,505
3,020 hogs.....	6,040
42 thoroughbred horses.....	7,350
65 graded horses.....	4,871
2,280 American horses.....	129,605
3,057 Mexican horses.....	61,140
67 mules.....	2,680
143 oxen.....	3,075
400 sheep.....	400
Flaxseed.....	2,800
Other personal property not enumerated.....	149,665
Total.....	2,101,914

The county of Latah has an area of about 1,100 square miles, of which it is fair to estimate that at least three-fourths can be easily cultivated. The lands are high, rolling prairie, covered in their virgin state with a dense growth of bunch grass. The soil is a deep black loam, upon which immense crops of all the cereals and less tender fruits can be raised. The statistics given in the accompanying tables are the most emphatic comment upon the productiveness of the soil, showing, as they do, that already an annual yield of grain and seeds aggregating three and one-third million bushels, has been attained. When all the agricultural lands of this county are brought under cultivation it may fairly be estimated that the production will exceed the present yield of the entire Territory.

Springs of water are abundant, irrigation is unnecessary, and droughts unknown.

The county contains an abundance of timber for all purposes, consisting of pine, fir, spruce, tamarac, and cedar. The climate is extremely healthy and pure, the mortality rate in all diseases being very light compared with other countries.

There are three flouring mills within the county limits, whose output is about 40,000 barrels per annum. There are eight saw-mills, which have sawn this year 15,000,000 feet of lumber, most of which has been absorbed by the people of this county. Good indications of soft coal are plentiful, and the Muscovite mica mine is scarcely second to any of the kind.

The principal towns are connected by railroad, and the county generally has good telegraphic and telephonic facilities.

Moscow, the county seat, is the largest town of the county. In trade, population, and wealth Moscow is rapidly assuming the proportions of a substantial city. It occupies an elevated and commanding geographical position; is well drained and well arranged; has a national bank, a good newspaper, and about forty other business concerns. Two railroads connect with the town, and its local trade extends over a large district of country. Its educational facilities are unexcelled. The new court-house cost \$25,000, and is a model of neatness and adaptation.

The State University is located at Moscow. Plans and specifications for the erection of suitable buildings have been accepted, and work thereon will soon begin. The university board is officered by intelligent and progressive citizens, and everything that can be provided by a zealous and cultivated interest will be secured, and Moscow will

doubtless become the educational capital of Idaho. A very desirable class of citizens are building at this place beautiful homes, of refinement and comfort, and sobriety and thrift are the characteristics of the people.

The eminent gentleman to whom I am indebted for valuable statistical and general information relative to Latah County, says :

I am requested by Hon. J. H. Wickersham, Territorial comptroller, to add some statistics relating to the beautiful women of this county, but domestic influence has been brought to bear upon me, and I am compelled to report that Mrs. ——— is the only very beautiful woman known in this portion of Idaho.

LEMHI COUNTY.

	Assessment values.
Improved land patented, 2,140 acres	\$30,000
Improvements on above	35,000
Improvements on unpatented land	90,000
Improvements on mining claims	40,000
Quartz-mills	45,000
Concentrators	500
Smelters	21,490
Mining ditches	8,540
Saw-mills	13,000
Flouring mills	4,000
Camas and Nicholia Telephone lines	1,000
Money and other securities	20,315
Goods, wares, and merchandise	100,000
4 thoroughbred horses, at \$500 per head	2,000
1,000 graded horses, at \$37.95 per head	37,953
2,391 range horses, at \$25 per head	59,775
10 oxen, at \$26.69 per head	267
1,500 sheep	2,285
4 goats	12
10,581 range cattle	137,553
15 thoroughbred bulls, at \$50 per head	750
15 thoroughbred cows, at \$50 per head	750
360 graded cows, at \$24.75 per head	8,910
285 hogs, at \$5 per head	1,425
Other personal property not enumerated	64,475
	725,000

The undeveloped resources of Lemhi County are enormous, and for mining enterprises no better field can be found. A large number of mines have been located and sufficiently prospected to prove their value, but the introduction of capital is required to work both quartz and placer mines more extensively. Among prominent mines can be mentioned the Kentuck, owned and operated by the Kentuck Mining Company, and the Grunter, owned and worked by the original owners. These mines are located at Shoup, and each is equipped with a 10-stamp mill. Large bodies of ore are exposed in both mines, and yield in gold from \$12 to \$25 per ton. About 5 miles from Shoup, on Pine Creek, is located the property of a Philadelphia company, comprising the Fissure, Humming Bird, and Ready Cash mines, on which a 10-stamp mill has recently been built. The mines promise well and the company is sanguine of success. Still above, on Pine Creek, is another group—the Richmond, Virginia, Pawnee, Lexington, and Uncle Sam. These mines are being opened by the locators, and show large bodies of good ore.

The Dahlenaga mining district comprises all the waters of the North Fork of Salmon River and its tributaries. In this district are located many valuable properties. Among the prominent ones, and concentrated under one management, are the Huron, Oneida, Rose, Sucker, Sucker Extension, Diana, Eureka, Key Stone, and Twin Brothers. These mines have been extensively developed and large quantities of ore exposed.

Near the group above mentioned is the Emerald mine. This property has been worked by the locator for years, and is developed to a depth of over 400 feet, and in tunnels and drifts nearly 2,000 feet, exposing a large quantity of high-grade ore. On this property is a 10-stamp mill and furnaces for roasting concentrates.

Within this district are other good properties, including the William Edwards, Tiger, and Rattler, on which tunnels and drifts have been run for over 1,000 feet, showing an immense amount of ore of good quality. The ore in the Dahlenega district is nearly all high grade.

The Salmon City district has a number of meritorious mines, among which are the Silver Star, Ranges, Eldorado, Freeman, and California. The Silver Star is located about 12 miles north of Salmon City and shows a wonderful outcrop of ore, at least from 10,000 to 15,000 tons in sight, and assays well in both gold and silver.

The Ranges mine is developed by tunnels and shafts to an extent of over 500 feet, and shows a vein of very free milling gold ore from 1 to 3 feet in width, which will work \$25 per ton. The Eldorado contains a large body of ore worth \$10 per ton. The Freeman and California are promising properties, and show large veins of ore worth from \$20 to \$30 per ton.

Within the last four years a new district situated about 10 miles northwest of Salmon City has been named the Eureka district. Within this district are the Red Bird, Daisy, Selina, Bird, Anna, and Comet mines. Much work has been done on these properties with satisfactory results.

On Sandy Creek, about 20 miles southeast of Salmon City, several mines have been located within the past three years and are being successfully worked. The ore shows great value and in arastra tests yields as high as \$60 per ton. A mill is now being erected on these properties.

In the Leesburgh district are many good locations. Among those which have been extensively worked may be mentioned the Haidee, Shoo Fly, and Pioneer. On these mines large bodies of ore are exposed, with a value of from \$10 to \$50 per ton.

In the Prairie Basin district are the Watch Tower Monument and True Blue mines. These are gold and silver lodes, and a large quantity of ore is in sight.

The Yellow Jacket mines, comprising the North and South America and extensions, are gold-bearing properties and situated about 10 miles from Prairie Basin. A 10-stamp mill is running steadily on the property at a good profit.

The Viola mine, located at Nicholia, has been a great lead and silver producer, and several millions of dollars have been taken therefrom.

In the Texas district are a number of very promising silver mines, from which considerable ore has been shipped, yielding from \$75 to \$300 per ton.

Placer mining is carried on to a considerable extent in this county, but owing to a scarcity of water the past two years the output has been small compared with former seasons. Placer ground is not only abundant but it is rich. Water can be brought from the large streams to cover thousands of acres, and the ground, instead of being worked as at present, from two to six weeks each season, can be worked six months with great profit. On Napuis Creek and its tributaries, which are within the Leesburgh district, over \$10,000,000 have been taken, and still there is a vast amount of gold remaining, probably much more than has already been extracted, but bed rock flumes starting below all the old workings are required.

The most notable placer mine in the county is on Moose Creek, and owned by David McNutt. It is estimated that this property has produced over \$500,000. The owner of this valuable mine estimates he has several million dollars remaining in the gravel to be taken out. The flume through which this gravel is washed is 7 feet wide by 6½ feet deep.

The agricultural resources of Lemhi County undeveloped are very large. At present about 15,000 acres are under cultivation, or have been cultivated, and the amount of tillable land in the county aggregates over 400,000 acres, which with proper facilities for irrigation can nearly all be cultivated. As the average yield of crop is large it can readily be seen what an immense population Lemhi County is capable of supporting.

The lumbering resources are also large. A careful estimate by people well acquainted with all sections of the county places the standing white pine, spruce, and fir timber adapted for lumbering purposes at over 1,000,000,000 feet.

From 40,000 to 50,000 forest trees have been planted, including maple, ash, walnut, chestnut, and other varieties, from 5,000 to 7,000 apple trees, and about 2,000 pear, plum, and cherry trees.

Although the planting of fruit trees did not commence until a comparatively late date, it is thoroughly demonstrated that fruit raising will be a success, as several orchards are now in full bearing.

Skilled mechanics receive \$5 per day; miners and millers, \$3.50; wood-choppers, \$2.50; herders and skilled farm hands, \$35 to \$45 per month; teamsters, \$50 to \$60; lumbermen, \$40 to \$50; cooks, \$30 to \$40.

For valuable information contained in this report, I am indebted to Hon. J. W. Birdseye, James M. Shoup, Charles J. Barclay, Thomas Pyeatte, and various public officers.

LOGAN COUNTY.		Assessment value.
Improved lands patented, 70,108 acres.....		\$52,957
Value of improvements on above		90,898
Mining property.....		29,870
City and town lots.....		79,485
Value of improvements on above.....		135,535
Oregon Short Line Railway Company.....		1,168,325
Western Union Telegraph Company		8,602
Cattle, 10,554 head.....		136,107
Hogs, 263 head.....		967
Horses, 3,731 head		99,547
Sheep, 5,799 head		9,097
Goods, wares, and merchandise.....		51,565
Other personal property, not enumerated		78,867
Total taxable property		1,941,822

This county was created out of the county of Alturas by act of the last legislature, dated February 7, 1889. An issue involving the validity of the act is pending in the Supreme Court of the United States; but the reorganization of the county is fully completed.

Logan County embraces an area of 7,000 square miles, being larger than the States of Connecticut and Rhode Island combined. Shoshone is the present county seat.

Mountain and valley and plain interspersed make up the surface of the county. On the south, running the entire length of the county is the great Snake River Basin. In the northwest is Camas Prairie, a rich agricultural region of 1,400 square miles of tillable land. The great Wood

River Valley contains nearly as much more, and there are several smaller valleys branching out from Wood River. The valleys are surrounded with low-lying foot-hills and high mountains whose sides provide excellent grazing, and in whose strongholds are imprisoned ores and minerals of all kinds.

With the single exception of the lava beds on the south, the soil of the county is most productive, yielding rich treasures to the farmer. Camas Prairie is well adapted to wheat growing, and in time may be the granary of Idaho. In the Wood River and other valleys the rich sandy loam can not be excelled. It not only yields large returns in cereals and hardy vegetables, but fruits of all kinds produce abundantly. The mountains are covered to their peaks with the noted bunch-grass, showing a splendid soil. Nearly the entire area of the county is susceptible of profitable cultivation.

The report of the county assessor shows 70,108 acres of improved land, but there are still remaining immense tracts desirable for entry. The great bulk of this lies in the southern part of the county, and can only be redeemed by the mammoth irrigating canals leading from Snake River. The cost of these contemplated canals is too great for private corporations to undertake; but now that the attention of the National Government has been directed to the matter, it is felt that it will only be a matter of a few years until all the land along the Snake River is redeemed. As it is, the land affords an extensive winter range for thousands of head of stock.

Logan County is well adapted to the industry of stock-raising. In the winter the mountains and valleys in the northern part of the county are covered to the depth of from 3 to 4 feet with snow. This melting in the spring months gives abundance of moisture to maintain a luxurious growth of grass for grazing herds during the summer months. On the approach of winter the herds find a fine winter range along the Snake River, where rain falls during the months that the snow falls in the northern part of the county. By moving stock backwards and forwards from one part of the county to the other on the approach of the change of seasons, stock-men feed their stock from one end of the year to the other without cutting hay. Cattle, horses, and sheep are the varieties raised. Home consumption affords market for a large proportion of the fat cattle and sheep.

Camas Prairie.—This is the most important tract of agricultural land in Logan County. It extends east and west on either side of the Malad River, a distance of 100 miles. The tillable area is 80 miles long, and has an average width of about 18 miles. Every foot of this tract is worth taking up. Over 800 homesteads and pre-emptions have already been filed. Sixty pre-emptions have been filed since July 1, 1889, and but a few years will elapse until the last acre is taken up by home seekers. The prairie is a high plateau at an estimated average altitude of 5,300 feet. Unlike many other portions of Idaho, irrigation is unnecessary. Underneath the rich soil, at a depth of but a foot or two, is a stratum impervious to the water. So the water that soaks into the soil from the melting snow in the mountains remains close to the surface, affording what is called "subirrigation." The climate on the prairie is delightful. Snow falls about the middle of December, remaining on the ground till about the middle of March. The weather is not cold; the air being high and dry, the cold is felt but little. As soon as the snow goes off the rancher can begin his plowing. The principal crops are wheat, oats, barley, and hay. The average yield of wheat is 35 bushels, oats 60, and barley 50. Hon. Ira S. Waring, one

of the most extensive farmers on the prairie, raised 8,000 bushels of grain on 125 acres. Ready market for the grain raised is found close at hand in the mining camps along Wood River. A roller mill at Bellevue has been unable to buy enough wheat to supply its demands. Fruit trees have been set out on all parts of the prairie. All are yet too young to bear, but their thrifty condition promises rich fruitage when they have the age. Hon. W. Y. Perkins, living at Soldier, has a large orchard of plum, apple, and cherry trees. Out of 70 trees set out, but 2 have died. The prairie is a community of homes. Three towns, Soldier, Crichton, and Corral, have daily mails. Seven school-houses afford educational privileges to all.

The mineral resources of Logan County may properly be embraced in two grand mineral belts, entirely different in their character and product. The older or more developed of these two may be described as producing strictly argentiferous galena of high grade. This district is known as the Mineral Hill mining district, and is located on either side of Wood River, in the immediate vicinity of Bellevue and Broadford. The second district, familiarly known as the Gold Belt, produced gold ores exclusively. Doniphan is the center of this second great mineral belt.

Mineral Hill mining district.—This lead-silver-bearing belt or zone embraces an area that may properly be defined in boundary as being a parallelogram 2 miles wide, extending north and south on either side of Wood River, a distance of 12 miles in Logan County, and continuing from the northern boundary of the county in its northerly course a distance of 40 or 50 miles in Alturas County. The center of this rich mineral region is located in Galena Gulch, near the town of Broadford, on Wood River, where several of the principal mines are situated. The most prominent of these is the Minnie Moore mine, which has at present the largest development of any mine in the county, or in all the Wood River country. It has reached the depth of 1,100 feet, from which the lowest level is projected. The output of this mine during the last six years has been an average of 3,000 tons of ore per month. The amount of ore produced by this mine during the first seven years has been about 252,000 tons, which has been concentrated to 50,000 tons, of which 65 per cent. has been lead and 4,000,000 ounces have been silver. The market value of the lead has been in the neighborhood of 4 cents a pound, making an aggregate value of the base metal produced by the mine \$2,600,000. At the same time the 4,000,000 ounces of silver produced roughly approximated \$4,000,000, making the total product \$6,600,000 for the seven years the mine has been in operation. It is safe to say that 25 per cent. of this sum has been net profit to the owners. The property is owned in London and is operated by Thomas Carmichael, esq., through his efficient superintendent, J. M. Kinnear. The plant is unostentatious, but compact, and excellently adapted to the operation of a large mine on a thorough and economical basis.

The second mine in importance in this district is the Queen of the Hills, half a mile distant from the Minnie Moore. It produces a grade and character of ore similar to that of the Minnie Moore. It has been worked incessantly for the last eight years by the owners, a Salt Lake City corporation. It has attained a depth of over 800 feet, and has recently completed a three-compartment shaft. The gross output of the Queen of the Hills has been \$1,800,000, and the vein is as well defined as ever. The mine is under the superintendency of Fulton G. Haight.

Along this belt within the limits of Logan County may be mentioned other mines of great promise, the developments of which have not been

on so large a scale as those of the Minnie Moore and Queen; but they have made valuable shipments of ore without concentration, and now possess large bodies of ore. By means of milling facilities these will be made mines of great product. Among these are the Michigan, Star, Relief, Penobscot, Overland, Pacific Tunnel, Monday, Deadshot, and Queen Victoria.

A complete description of the mines of the gold-belt district, in the northwest portion of Logan County, would extend this part of my report too far, and an abridged description does not do it justice. The mineral product is almost exclusively gold, of which about a quarter million dollars has been so far extracted. A large expenditure of capital has been made; the properties are no longer prospects, but mines; and a profitable return to the courageous men who have risked so much in their development is no longer a matter of question.

I am indebted to Prof. H. R. Baker, of Bellevue, and to Capt. James Gunn, of the Gold Belt, for information of great value, and regret that I can not use in this report all the facts they have so courteously placed at my disposal.

NEZ PERCES COUNTY.

	Assessment values.
Improved land patented, 90,477 acres.....	\$424, 117
Value of improvements on the above	63, 585
Improvements on lands not patented, 19,880 acres	11, 755
City real estate.....	117, 615
Improvements	109, 041
Irrigating ditches.....	500
Western Union Telegraph Company.....	150
Spokane and Palouse Railway Company.....	32, 500
Money, bank stock, and other securities.....	117, 251
Goods, wares, and merchandise.....	83, 600
Calves, 445 head.....	3, 570
Range cattle, 4,280 head	50, 139
American cows, 1,101 head.....	18, 469
Hogs, 1,000 head.....	2, 039
Colts, 456 head	5, 158
Thoroughbred horses, 18 head.....	1, 900
Graded horses, 3,216 head.....	66, 173
American horses, 756 head.....	30, 775
Mules, 83 head.....	3, 280
Sheep, 15, 025 head.....	18, 710
Other personal property, not enumerated.....	42, 865
Total taxable property.....	1, 203, 192

After many years of steady prosperity, the county of Nez Perces has experienced one season of partial loss. Less rain has fallen this year than in any previous year of its history, and the hardy grains which withstood the lack of moisture were largely destroyed by hot winds. But the people would be ungrateful indeed to complain of one unprofitable year after twenty of the better kind.

But as greatly diminished as is the grain production, the fruit crop in quantity and quality is unexampled. Peaches, pears, prunes, apricots, apples, and all small fruits are in the greatest abundance, and the settlers are convinced that not even California fruits can excel those of this region. Pears seem to thrive better than any other fruit. The "Idaho pear," now everywhere recognized as a distinct variety, and possibly the best known to the horticultural world, had its origin here. The Idaho Pear Company, composed of gentlemen of this county, has grown thousands of these trees for market, and the demand comes from the greatest distances.

The southwest portion of this county, known as Craig's Mountain, has not heretofore been considered fit for agricultural purposes. It is

high and rolling table-land, and when compared with the fertile valleys has not seemed attractive; but of late the scarcity of Government land has compelled settlers to try Craig's Mountain, and the results have been most gratifying. It is peculiarly healthful, and the ground has been found very productive. Settlers are crowding in rapidly, yet there is still room for more.

The larger part of this county is as yet included within the Nez Perces Indian Reservation. The lands of this reservation are now being allotted in severalty, and there will be opened for settlement nearly 500,000 acres of the finest agricultural and grazing land in the Union, with a climate unsurpassed on the globe. Vast amounts of excellent timber land will also be available.

The beautiful city of Lewiston grows more beautiful year by year. Its magnificent river facilities, its superior educational system, its substantial business blocks, its lovely dwellings surrounded by orchards and gardens, and the long stretch of highly cultivated farms on the adjacent streams, combine to make a scene of prosperity and content. The county is completing a new court-house at a cost of \$30,000; new brick jail, \$3,000; the graded public-school building, \$15,000.

The mineral resources of the county should receive the attention of practical miners. A careful geological survey of the county, and a critical examination of the formation of ledges, have convinced the best informed men who have given the entire region careful study that the mineral deposits are of great value. Several most gratifying assays have been had. The general characteristics of the rock formation are similar to those of Leadville, Colo.

I am indebted to Col. J. W. Reid, Mr. D. V. Williams, and Mr. P. M. Davis for facts and data of special value.

ONEIDA COUNTY.		Assessment values.
Improved land patented, 54,992 acres.....		\$211, 152
Value of improvements on above.....		108, 862
Improvements on land unpatented, 42,241 acres		37, 400
Western Union Telegraph Company		3, 883
Irrigating ditches.....		21, 650
Oregon Short Line Railway Company		139, 360
Utah and Northern Railway Company.....		107, 250
Goods, wares, and merchandise.....		29, 315
Range cattle, 6,500 head, at \$12.....		78, 000
American cows, 6,608 head, at \$16		105, 728
Colts, 1,245 head, at \$12.50		15, 562
Graded horses, 3,857 head, at \$25		96, 425
Mules, 6 head, at \$22.50		135
Oxen, 13 head, at \$16.....		208
Sheep, 40,946 head, at \$1.50		61, 419
Money, shares, and other securities.....		8, 249
Other personal property, not enumerated.....		666, 406
Total taxable property.....		1, 691, 004

The county of Oneida is more closely settled, with possibly one or two exceptions, than any other portion of Idaho. It is strictly an agricultural and stock-raising county. It has no mountain ranges of towering height, but its hills are of sufficient elevation to receive every winter a heavy fall of snow and provide an adequate water supply.

This county is a noble illustration of what quiet industry, economy, and old-fashioned thrift will do. The larger portion of the county is aside from the great lines of commerce; its railroad facilities are limited indeed; it has no great manufactures or mines; there is but slight rain-fall; yet in face of all discouragements more than 100,000

acres of land have been reclaimed by irrigation; small and well-tilled farms have yielded a bountiful return; improved grades of live stock flourish on its meadows, and year by year the number of free holding families increases and the tax-roll grows.

A very large proportion of both the earlier and later settlers are Welsh. There is no need to erect jails or poor-houses for such men. All they need is a government which will protect them from disturbance; they themselves are orderly and honest. Many in early times were infatuated with Mormonism and Mormon practices, but their sturdy independence and good sense are prompting many withdrawals from that misguided society.

Reference to the statistics given in the various tables accompanying this work shows the rank of this county in the production of grain and live stock. Its growth from year to year is equalled by few other localities. There are four flouring mills, all good mills, and the one at Franklin probably the costliest in the Territory. The North Star Woolen Mill, also at Franklin, has in the past produced excellent yarns. The population of Franklin is growing. The place is exceptionally prosperous, and is an aggregation of homes and comfort. Preston, Weston, and Samaria are handsome agricultural villages. Malad is the county seat. It contains a population of about 1,200 and has about 30 business houses. The court-house and furnishing cost \$20,000; the jail \$5,000.

There are still about 6,000 acres of forest land. There are 8 saw-mills, whose united production last year was 2,500,000 feet of lumber.

The grazing lands of the county embrace about 500,000 acres. The present area of farming land probably can not be very largely increased without the construction of a comprehensive system of storage reservoirs for water.

I am indebted to Mr. R. H. Davis, editor of the Enterprise, Malad, for valuable statistical information.

OWYHEE COUNTY.

	Assessment values.
Improved land patented, 4,685 acres	\$46,861
Improvements	32,860
Land unpatented (39,000 acres), improvements	70,975
Improvements on mining claims.....	12,230
Telegraph lines	3,100
Quartz mills	20,000
Concentrators	15,000
Mining ditches	1,700
Irrigating ditches.....	15,000
Money on hand	7,100
Goods, wares, and merchandise.....	46,000
Cattle, 31,000 head, at \$11.....	341,000
Horses, 11,375 head, at \$23	236,325
Jacks and jennies, 125 head, at \$20.....	2,500
Jewelry and plate	10,500
Mules, 125 head, at \$37.50	4,500
Hogs, 400 head, at \$8.....	3,200
Sheep, 7,700 head, at \$1.60	12,320
Other property not enumerated.....	8,124
Total.....	899,295

This county lies in the southwest corner of Idaho, and is noted no less for its grazing lands than for its wealth in mines and mining industries. The Owyhee mines, as they are called, were discovered as long ago as 1863, about 9 miles in a westerly direction from Silver City, on what is known as Jordan Creek, said creek having been named after the dis-

coverer of the placer mines thereon. In a short time the prospecting party of which Jordan was a member discovered War Eagle Mountain and several quartz lodes which have since produced a great amount of money, and are being worked at the present time. The lodes so far discovered lie within an area about 20 miles square. They vary in width from 2 to 60 feet, while the ores assay from a trace of gold or silver into thousands of dollars.

This has been one of the greatest gold and silver producing counties in the Territory, having turned into the coffers of the world something like \$26,000,000 between the time of the discovery of its mines up to 1876, when, upon the collapse of the Bank of California, capital was withdrawn from the mines, and the life of the camp was left to be sustained by individuals residing therein. Though capital had been withdrawn the mines still continued to yield, which fact finally attracted the attention of outsiders, who came in and invested considerable money in the mines, and are now working the same. Some of the most prominent of the mines now being worked are hereinafter described as follows, to wit:

The Oro Fino Group.—This group of eight mines belongs to the Oro Fino Mining Company, limited, of London, England, and are being worked under the immediate supervision of Mr. Dalby Morkill, the managing director. The group is called after the Oro Fino, a mine which has produced in the past \$1,800,000 and is destined soon to produce as much more. The lode is situated on War Eagle Mountain, 3 miles distant from Silver City. The vein is a true fissure varying from 2 to 6 feet in width, carrying free milling ore of gold and silver. The shaft has reached the depth of 307 feet while the mine has not been stoped out to that depth. Levels already started on the mine before it was purchased by the company now owning it have been continued with good results. A lode of very rich ore has been discovered for a distance of 120 feet in length, reaching upward about 100 feet, or as far as developed. At a recent test ore from this lode milled \$225 per ton, the product being nearly all gold. Over the mine is a most substantial shaft-house with hoisting machinery capable of working the mine to a depth of 1,500 feet, while at Silver City is the new Oro Fino 20-stamp steam quartz mill. The Oro Fino group of mines is covered by ten locations, patents for which have been applied for.

Poorman Group.—This group of mines covers an area of about one-half a mile in width by 1 mile in length, and is composed of eight or ten lodes, the principal of which being the celebrated Poorman, the Belle Peck, Oso, Illinois Central, South Poorman, Silver Cord, and Jackson. All these mines have produced more or less, while the Poorman has yielded millions. United States patents have been applied for for this group of mines. The property was purchased about one year since by a syndicate of gentlemen then living in London, among whom was Mr. J. C. Kemp van Ee, who is now residing at Silver City, and managing the property. Although he has had charge of the same but a short time it has yielded handsomely, and is now being developed under his direction by cross-cuts, tunnels, and drifts. He has opened up a rich body of ore in the Oso, which shows free gold in considerable quantity. In the Illinois Central he has opened up about 500 feet in length of pay ore by 60 feet in depth. How much deeper the chute extends can only be determined by the drill and pick. The Poorman mine will be tapped by a tunnel run from the Belle Peck mine at a depth of about 700 feet, and this once celebrated lode will then be worked through the Belle Peck tunnel.

Stormy Hill.—This property is situated southeast of the Poorman lode, and belongs to Mr. A. J. Sands, Owyhee County. The lode averages about 3 feet in width, and has a shaft on it 90 feet deep. Levels have been run each way from the bottom of the shaft in good ore. The ore is free milling and is easily extracted from the mine.

Empire.—This lode is among the best developed mines in the camp, having a shaft sunk on it to the depth of about 700 feet, with a man-way from top to bottom. Drifts are run on the vein every hundred feet from the surface to the bottom of the shaft, making in all seven levels, while from the bottom of the shaft a drift has been run north for about 700 feet. There is a great amount of ore in this vein that will pay handsomely over all expenses of extracting and reduction. A good ore house and hoisting works stand over the mine, the machinery being in perfect working order. The property belongs to Hon. J. I. Crutcher and Mr. J. L. Crutcher.

Mahogany is the property of Mr. T. Regan. Has been developed to a depth of 800 feet by shaft, and drifts run on the lode. Vein averages about 2 feet in width, and has produced \$400,000.

Morning Star is situated about one quarter of a mile north of Silver City, and is owned by Messrs. Stoddard, Townsend, and Smith. Lode averages 2 feet in width, and has shaft sunk to a depth of 225 feet. Mine has produced about \$750,000.

Black Jack.—This property is owned by W. H. Deevey, of Silver City. Lode, 1,500 feet in length by 100 feet in width. Has been worked to a depth of about 200 feet by shaft and tunnel. Stopes have been run and ore extracted which has yielded over \$300,000. The vein will average 4 feet in width, incased in porphyry. The ore is free milling, carrying gold and silver. The property is a valuable one, and can be worked to great advantage by tunnel from Blue Gulch, which would cut the mine nearly 1,000 feet deep. This lode is situated on Florida Mountain.

Seventy-nine, owned by W. B. Knott, is situated northwest of the Black Jack. Has been developed by cross-cut and drifts, showing a vein that will average 6 feet wide of ore that will run from \$20 to \$50 per ton. There are thousands of tons of ore in sight, which only need extracting and reduction to place the owner beyond all financial wants.

Phillips & Sullivan is owned by Mr. Isaac Phillips and Mr. J. F. Sullivan, of Silver City. The lode location is 1,500 feet in length by 600 feet in width. The vein averages 3 feet in width. Has been worked for about one year by shaft and drifts, and has produced \$40,000 in gold bullion.

Wagontown District.—The mines in this district were discovered in 1876 by J. W. Stoddard, who, in company with others, located the Stoddard lode, the first mine recorded in that district.

This lode is located in a northerly and southerly direction; is 1,500 feet in length by 600 feet in width. Has been opened by tunnel, showing lode 8 feet wide; ore free milling, yielding on an average \$60 per ton. It is the property of Messrs. T. Reagan and C. M. Hays, and is now being prospected by Hon. J. P. Jones and Mr. T. Regan.

Wilson.—This is probably the largest and richest mine in Idaho. It lies northwest of the Stoddard, is in the same formation, and is worked by a cross-cut run to cut the lodes, and then by drifts. The property is owned by Christian and Louis Wahl, of Chicago, and Capt. J. R. De Lamar, of De Lamar, Owyhee county. There are three veins in this location, though from the formation some would call them all one, or a mountain of quartz mineralized. The first is called Voshay, being a

lode about 15 feet in width; the second, the Wilson, 30 feet in width; and the third the 77, it being 77 feet in width. The veins have all been run on and opened up in good shape, showing, it is estimated, over 300,000 tons of ore that will mill from \$15 to \$200 per ton. The ore is easily extracted, two men being able to keep a 25-stamp mill running. Indeed only about one-half the ore extracted is crushed, the remainder being simply screened and thrown into the pans. The bullion produced is high grade in gold. A portion of one of the lodes named produces silver ore that runs over \$500 per ton per car-load. This character of ore is being shipped almost daily to the railroad, distant from the mine about 48 miles, where it is loaded on the cars and shipped to Denver for reduction. Captain De Lamar has erected a 10-stamp mill on Jordan Creek, about half a mile distant from the mine, which will soon start up on the gold ore from the mine. He is also constructing a tramway with which to run the ore from the lode to the mill.

Sommercamp Group of Mines.—This group of mines lies west of the Wilson, and is owned by Mr. W. F. Sommercamp, sr., of Silver City. Unlike many other mine-owners in this and other districts, Mr. Sommercamp has worked his mines with the view of opening them up and showing the value of his property. He has been about six years in running cross-cuts and drifts on the lodes found, and as a result can show thousands of tons of fair milling ore, some of which will assay into the thousands of dollars. The lodes in this group are all large and well defined.

SHOSHONE COUNTY.

Assessment
values.

Land patented (11,687 acres)	\$13,404
Land unpatented	18,000
Improvements on the same	433,265
Improvements on mining claims	75,000
Telegraph lines	200
Quartz mills (5)	35,000
Concentrators (10)	250,000
Smelters (2)	2,500
Cœur d'Alene Railway and Navigation Company	182,500
Washington and Idaho Railway Company	20,000
Toll-roads, ditches, and telegraph lines	28,800
Money, shares, and other securities	35,000
Goods, wares, and merchandise	204,500
Beef cattle, 125 head, at \$22.50	2,812
Range cattle, 275 head, at \$15	4,125
American cows, 75 head, at \$35	2,625
Graded cows, 125 head, at \$25	3,125
Hogs, 200 head, at \$4	800
American horses, 250 head, at \$60	15,000
Native horses, 200 head, at \$15	3,000
Jacks and jennies, 3 head, at \$10	30
Mules, 50 head, at \$75	3,750
Oxen, 16 head, at \$25	400
Sheep, 300 head, at \$1.50	450
Other personal property not enumerated	298,100
Total taxable property	1,632,386

Westward from the summit of the Bitter Root Mountains to the eastern boundary of Kootenai County, and from the southern drainage slope of the St. Joe Valley to the Cœur d'Alene Mountains on the north, comprises the great mining section of Shoshone County, known as the Cœur d'Alene. This wide region of mountain and gulch, covered with dense growths of pine, tamarack, and cedar, was comparatively unknown until five years ago, when the discovery of placer gold by Prichard and his associates in the gulch now bearing his name excited the

stampede which quickly populated the north and south forks of the Cœur d'Alene River with from 4,000 to 5,000 hardy men. In 1884 the first discovery of galena was made on Canyon Creek, a tributary of the South Fork, and the Tiger and the Poorman mines then located have since become famous for the volume and value of their product, and are now the nucleus of the flourishing town of Burke. Soon after was discovered the Bunker Hill and Sullivan mines on Milo Gulch, also a tribute of the South Fork, about 12 miles below the mouth of Canyon Creek. This last find was of such extraordinary magnitude and richness as to awaken the interest of Montana capitalists in the country, and the ensuing year they constructed a narrow-gauge railroad from Lake Cœur d'Alene to these mines, and began hauling their ore to the concentrating works at Wickes, Mont. This was the entering wedge which opened the marvelous treasures of the Cœur d'Alene to the world, and enabled it in less than three years to become what it is to-day, the greatest lead producing region in the United States.

The developed and working mines of the Cœur d'Alene at the present time are mainly on the South Fork and its tributaries. There are 10 concentrators, of an average capacity each of 100 tons daily, now in operation along this line. Three of them, the Bunker Hill and Sullivan, the Emma and Last Chance, and the Stemwinder, being at Wardner. On Canyon Creek there are five: The Poorman, the Tiger, the San Francisco, the Gem, and the Granite; while the town of Mullan, 5 miles west from the Montana line, has two, the Hunter and the Morning. These mills produce 70,000 tons of concentrates per annum, containing an average of 30 ounces of silver and 60 per cent. of lead, to which must be added not less than 45,000 tons of selected ore sacked and shipped from the mines, averaging 40 ounces of silver and 60 per cent of lead; and this entire output, aggregating a cash value of \$9,030,000 at the market sale of 90 cents for silver and 4 cents for lead, averages the mine-owners of the Cœur d'Alene, over all expenses of freight, treatment, and percentage of loss, a clear profit of from \$25 to \$30 per ton; and the present development of other properties on the same mineral belts assure the belief that another two years will double the number of mills and the production of ores and concentrates. Along the South Fork, in consequence of this great output of mineral wealth, have grown a number of beautiful and flourishing towns, some of which will quickly assume metropolitan proportions with the completion of the railroads now building, and which by the shortening of distance and the unusually attractive and picturesque features of the county, will bring much of the transcontinental travel through the valleys of the Cœur d'Alene, and at the same time afford such increased facilities for transportation as will greatly increase the product of the mines now operating, and encourage the full development of the thousand valuable mineral prospects now lying dormant.

The North Fork of the Cœur d'Alene River and its tributaries are not less valuable and promising in mineral prospects, and a branch line of the Washington and Idaho Railroad is now located from the main line at Kingston to the head of Beaver Creek, and will undoubtedly be built next year for a distance of 30 miles. There it will tap the product of what is known as the Sunset Group of mines, a galena deposit of such magnitude as warrants the estimate now made of an output of not less than 700 tons per day from present developments. From the mouths of Beaver and Prichard Creeks the North Fork trends to the north for about 20 miles, and heads in the southerly slope of the Cœur d'Alene Mountains, opposite Lake Pend d'Oreille. It is an unexplored region,

but the few adventurous prospectors who have penetrated its pathless forests have brought out many specimens of mineral equal in richness to any yet found in the country, and it is believed from this and from its geological formation and position that when the Upper North Fork is thoroughly explored it will prove as prolific of wealth as any other mining district of the Cœur d'Alene.

Prichard Creek, which empties into the North Fork about 2 miles above the mouth of Beaver Creek, runs for about 15 miles through the gulch containing the immense placer deposits which first attracted attention to the country. Over \$2,000,000 has been gathered from this ground by scattered and occasional labor on rim rock and in shallow gravel, by small parties of men working with primitive implements and old-time methods; but all attempts to reach the bed-rock depths of the main gulch and the bottom of the Old Wash channel stretching for miles along the hills, were failures, and they remained untouched until two years ago, when a company of New York capitalists, after a long and careful expert exploration of the ground, and after securing mining claims of 20 acres each for miles, began the construction of an extensive bed-rock flume on one of the side gulches of Eagle Creek, which is tributary to Prichard. Early last spring, with all of the latest appliances to hydraulic power, and with every known improvement to the methods of catching gold, they began work which resulted this fall in a sum total so far beyond all expectation that they are now preparing for the construction of a substantial and expensive system of flumes and ditches, with the view of a steady pursuit of this profitable work as their permanent business investment for years to come. Another company of Eastern men are now investigating the prospect for a more extensive enterprise of like character along the main channel of Prichard Creek, requiring a bed-rock flume of more than 8 miles in length; and there is no doubt that during the coming year, with these and other organized efforts by men of means, the vast but stubborn placer fields of the North Fork will be compelled to give up their golden store.

TOWNS OF SHOSHONE COUNTY.

Murray, the county seat of Shoshone County, is on Prichard Creek about 6 miles from its junction with the North Fork of the Cœur d'Alene River. It is in the heart of the gold belt, and is surrounded with gold-bearing quartz leads that will free-mill from \$8 to \$20 per ton. These have not been successfully worked thus far, the few attempts made having been undertaken with capital too small and expectations too great. The town has a population of about 700, chiefly supported at present by the placer diggings in its vicinity. It has a public water supply; a fine fire department; a lodge of the Masonic Order and one of the Ancient Order of United Workmen, and a flourishing post of the Grand Army. It has also a lively weekly newspaper, The Cœur d'Alene Sun, and has a future of unquestionable and permanent prosperity, when the proper effort is made to gather the wealth of its hills and gulches.

The town of Wallace, with a population of 1,000, is situated in a beautiful basin of the South Fork Valley at the junction of Nine Mile, Placer, and Canyon Creeks, and is the supply depot of the great mining interests of these gulches. It is the railroad transfer for all the tributaries of the Upper South Fork, and has many well-supplied and substantial business houses in every branch of trade. It has two first-class hotels, several societies, good schools, and an able and enterprising tri-weekly paper, The Wallace Free Press. Wallace will more than double

its population during the coming year from the fact of its selection as the division terminus of the through railroad now building toward Missoula, Mont.

Mullan, 7 miles east from Wallace, has a natural location of great beauty, and is one of the coming towns of Cœur d'Alene. It is well built, has two fine hotels, a public school, and a weekly newspaper, The Mullan Tribune. This promising place has a population of about 800, and is the center of a mining district equal in extent and richness to any in the country.

Wardner, in Milo gulch, about 2 miles from the South Fork, is the business heart of the great group of working mines which have gradually opened in that district since the first discovery of the famous Bunker Hill and Sullivan. It is a flourishing town of 800 people, with schools, societies, fire department, and an excellent weekly mining journal and newspaper, The Wardner News. Its present population will largely and quickly increase when the railroads now building afford transportation for the full output of its mines.

The town of Burke, on Canyon Creek, 9 miles from the South Fork, has about 700 population, mainly supported by the Tiger and Poorman mines. It has a first-class hotel, water-works, fire department, and schools.

About 4 miles below in the same cañon is the town of Gem, with 200 people, around the newly-started works of the Gem and San Francisco mines.

At the mouth of Milo gulch, 2 miles below Wardner, are the towns of Milo and Wardner Junction with an aggregate population of 500. Both of these places are enterprising business points, deriving their main support from the Wardner group of mines.

The town of Kingston, at the junction of the North and South Forks of the Cœur d'Alene River, has about 200 residents.

Osborne, on the South Fork, with 200 population, is the center of the gray copper belt, a very rich deposit of mineral as yet undeveloped.

Delta and Myrtle, on Beaver Creek, a tributary of the North Fork, are placer-mining settlements with a population of 150 each.

I am indebted to Col. W. W. Hammill for interesting information relating to this county.

WASHINGTON COUNTY.

	Assessment values.
Improved lands patented, 39,914 acres.....	\$385,276
Value of improvements on the above.....	122,974
Mining claims patented.....	16,500
Quartz-mills.....	10,000
Western Union Telegraph Company.....	1,404
Oregon Short Line Railway Company.....	182,650
Money, shares, and other securities.....	3,710
Goods, wares, and merchandise.....	94,110
Range cattle, 15,973 head, at \$11.50.....	183,689
Thoroughbred horses, 10 head, at \$500.....	5,000
Graded horses, 3,904 head, at \$25.....	97,600
Mules, 51 head, at \$35.....	1,785
Imported sheep, 450 head, at \$5.....	2,250
Sheep, 32,937 head, at \$2.....	65,874
Other personal property not enumerated.....	13,974
Total taxable property.....	1,186,796

The agricultural resources of this county are confined, so far as developed, to the valley on the east bank of Snake River and the valleys of Weiser River and its tributaries. The former is 28 miles long, through which runs the Oregon Short Line Railroad with depot at Weiser, and

for this 28 miles it will average 3 miles in width. Most of this land lies so high that it will not produce crops without irrigation. When irrigated it proves very productive and is adapted to all kinds of grain (including corn) and every kind of fruit and berry grown in the temperate zone. No ditches have been taken from Snake River to irrigate these lands. What irrigation has been done is from the waters of the Payette and Weiser Rivers, and at this date the ditches are not of sufficient capacity to irrigate more than one-twentieth of the land.

It is true, however, that the Weiser will not any season afford sufficient water to irrigate all the lands unless a system of storage is adopted. This river runs through the entire length of the county for about 100 miles or more, and its beautiful, fertile valleys from their shape would seem to have been a chain of small lakes at some time. They are named, commencing at the mouth of the river, as follows: Lower Weiser, Middle Valley, Salubria, Indian Valley, Council Valley, and The Meadows. They vary little in size. These valleys during the growing season require less irrigation as you ascend the river, and even this very dry season fine crops have been raised in Salubria Valley and The Meadows without irrigation. In the latter valley, the highest on the stream, a peculiarity exists that is worth mentioning. It is found that the earth is warmer than the surrounding air, as grass will be found growing under the snow, and as fast as the snow melts away grass from 4 to 6 inches long is seen, and from this fact the people living in the valley give it as a reason that their vegetables are not blasted by the frosts as in other valleys lying below them. There is not much grain raised in this county, for the reason that there is no profit in it in the upper valleys on account of the wagon transportation required to get it to any outside market, and the lower valleys have an insufficient water supply for irrigation. There were a few car-loads of wheat and barley shipped out of the county last year, but it is doubtful if any will be shipped this year, as much of the acreage sown to grain was cut for hay. The mines being as yet undeveloped, the home market for agricultural products is very limited. As a consequence the farmers convert their grain and hay into such products as will bear long transportation. Several car-loads of horses have been shipped this season.

Many are turning their attention to raising hay exclusively, and for this purpose alfalfa is taking the lead of all other grasses. There are only two flouring-mills in the county, one at Weiser and one at Salubria. Mr. John Cuddy, the owner of the last named, has machinery on the way to convert it from the burr to the full roller process. Considerable attention is now being paid to raising fine horses. A Mr. Thompson, of The Dalles, Oregon, has purchased a tract of land a few miles above the town of Weiser, and at considerable expense is fitting it up with stables and track to fit his horses for the turf. He has now at his stables some of the finest blooded horses in the West. Quite a number of Percheron stallions (some ten or fifteen) have been brought into the county and sold the past year. The tributaries of the Weiser River are settled to quite an extent, the same being from one to two farms wide along the streams and from 5 to 15 miles long. Most of them produce fine crops and a few are set to fruit and berries and supply the home demand. There are a number of hot springs in the county.

MINING.

In common with every mountain county in the Territory, Washington has her valuable mines, containing gold, silver, copper, and lead. They are but partially developed, and until within the last three years

were not much thought of. They are now gradually coming into prominence, and bid fair to rival the best in the Territory. At the present time there are three mining districts, viz., Washington, Heath, and Seven Devils.

Washington district comprises the following silver lodes, which are now attracting attention: Black Hawk, Black Maria, Daniel Boone, Egan Group, Traveler, Muldoon, Kit Carson, Atlanta, and some others which are very little more than prospects. Those named have been partially developed, and for the amount of labor done show as much ore in sight as any mines in the United States. The valuable minerals of this district are silver, copper, and iron. The principal claims are taken upon lodes carrying silver, and are located in the vicinity of a mining town named Mineral. The lodes may be briefly described as a system of nearly parallel veins, whose strike is a little north of east, and whose dip, which varies from 30 to 70 degrees, is towards the north. Northeast they vary from 2 feet or less in thickness to 20 or even 30 feet. The grade of the ore, although generally esteemed low, is not so when compared with other silver camps. The concentrating ore being the undecomposed sulphurites in a porphyritic gangue are very abundant, and average 20 ounces per ton. Much of the oxidized vein matter will produce from 30 to 40 ounces of silver to the ton.

There are three quartz-mills in the district of a daily capacity of 35 tons, and one smelter of 35 tons capacity. Two of the mills named have been erected this season; one on the Daniel Boone, by Biddle & Lang, and the other on the Egan Group, by a company formed in Portland, Oregon. The population of the district is now about 200, a majority of whom are employed in or about the mines last above named.

Heath district.—The lodes of this district are large, well defined veins, carrying little if any valuable minerals except silver. The ores are of a lower grade than those of Washington district and far more rebellious in character; all have to go through the roasting process to be worked successfully. The names of the claims developed sufficiently to determine that they are true mines are the Belmont, Greenhorn, Buckeye, Climax, Hercules, Mary Ellen, and El Dorado. There is a 10-stamp mill on the Belmont, owned by the Heath Mining Company. They have expended not less than \$75,000 on the mill and mine. There are two other small mills in this district that might be termed prospecting mills, although one has a roaster and amalgamating pan attached. The name of the camp where the mines are located, as also the post-office, is Ruthburg. The population is about 20.

Seven Devils district.—In this district are located the great copper mines of the Territory, and the names of those more or less developed are Peacock, South Peacock, Copper Key, Tussel, Lockwood Group (four mines), Alaska Group (four mines), Blue Jacket Group (five mines), Helena, Dacora, Arkansaw, Olivia, Calumet, Anaconda, White Monument, Climax No. 2, and Sampson. The deepest shaft is 130 feet. Several tunnels have been run, some as long as 200 feet. The Peacock is estimated to have 30,000 tons in sight and the Dacora 15,000 tons; the others from 500 to 5,000 tons. The Climax is a gold lode. All the ores will average at least 30 per cent. copper, and carrying a percentage of gold and silver sufficient in some to pay a profit over transportation to reduction works at Omaha; which means packing on mules for about 10 miles, and then 80 miles by wagon to the railroad at Weiser, on the Oregon Short Line Railway, and thence by rail 1,400 miles to Omaha.

There is no great difficulty in building a railroad to these mines, and when done it is confidently asserted by those competent to judge that

this district will rival the far-famed Comstock of Nevada. The present population of the district is about 40, mostly native-born citizens. The district is located in as fine and heavy a timber belt as can be found in the Territory, and is exceptionally well watered, and, taken all in all, nature has placed every facility at hand to work these mines successfully, excepting the one very essential and indispensable requisite—cheap transportation.

I am indebted to Hon. S. Hasbronck, of Weiser, for important information in relation to this county.

AGRICULTURAL DEVELOPMENT OF THE TERRITORY.

It is exceedingly difficult to estimate the acreage of agricultural lands in Idaho. There are vast areas not yet officially explored. Prospectors seeking only the precious minerals have taken no note of the value of the land for the purposes of food production, and the most intelligent observation is yet inconclusive unless at the same time the quantity and availability of the water supply is taken into the account. Conservative estimates give us 13,000,000 acres of agricultural lands. Others place the amount at 20,000,000. I think it safe to estimate it at 15,000,000 to 16,000,000 acres. Our industrious pioneers have already brought under cultivation about 4 per cent., or 600,000 acres, expending \$2,000,000 in irrigating canals alone.

The altitude of the lands governs to a large extent the character of their productions. The valleys of Bear Lake, Lemhi, and Custer Counties are profitably cultivated at an elevation of 6,000 feet above tide-water, and at 5,000 feet, oats, wheat, potatoes, turnips, etc., are raised abundantly. Timothy and a few hardy grasses flourish at these altitudes. At 4,000 to 4,500 feet all kinds of grain and vegetables are profitable, except a few tender garden products. In some localities fruit is grown successfully at 4,000 to 4,300 feet, and berries are abundant at 4,500. The Boise Valley, so prolific of all kinds of fruit, is 2,800 feet above the ocean, while the valleys of the Clearwater and Snake Rivers, near Lewiston in the northwest, with an altitude of but 680 feet, revel in tropical vegetation. Thus the Territory of Idaho, in addition to its invaluable mineral wealth, possesses a share of the best climatic influences of every portion of the Union.

The soil in the valleys and on the plateaus, in the eastern and southern parts of the Territory, is composed of vegetable matter mixed with mineral, and in some localities with sand and clay. On this class of soil sage-brush grows extensively.

In the northwestern counties, dark loam of great depth prevails. In the gulches and near the mountains, this soil is mixed with decayed rock. Alkali soil is limited to narrow strips, in widely separated localities, and rarely interferes with agriculture.

The yield of all kinds of cereals, when land is irrigated, is most gratifying and is not surpassed by any State or Territory. The same can be said of all kinds of vegetables, while in many parts of the Territory tender vines produce abundantly.

Idaho fruits can not be excelled in quality or flavor. Apples, pears, peaches, plums, prunes, apricots, grapes, and all small fruits and berries are raised in great abundance. Huckleberries, gooseberries, and wild cherries grow wild in profusion on the mountain-sides and foothills. The camas, which gives a name to several prairies in the Territory, is found in all sections. It is a bulb which is prized highly by the Indians for food.

Our lands once covered with water for irrigation will support a more dense population than the same area in any of the Western States. The variety, superiority, and yield per acre of products will not be surpassed in any country.

STOCK-RAISING.

Idaho offers great inducements for raising cattle, horses, and sheep, the extent of grazing lands being practically unlimited.

It is estimated that the area of grazing lands approximates 20,000,000 acres. The climate being pure and dry, the grass cures on the ground, and remains nutritious during the winter. The Great Snake River Valley, and the uplands and rolling foot-hills on its border, in the counties of Bingham, Cassia, Alturas, Logan, Elmore, Ada, Washington, and Owyhee, are in this great basin. Lemhi and Custer Counties are in the great water-shed of the upper Salmon River, while Idaho, Nez Percés, and Latah, in the northern part of the Territory, are all fine grazing counties.

More attention has been given to raising cattle than to any other kind of stock. Until recently large profits have been realized by those engaged in this industry. The prevailing low prices for beef cattle in the Eastern market for the past two years have greatly reduced the profits of our cattle-growers. Notwithstanding these low prices there is a fair profit left for those engaged in the business. The low prices referred to have induced many to sell their cattle and invest in sheep. Sheep-raising is rapidly on the increase, and returns handsome profits to all engaged in raising them. A ready market is found for the wool, while the wethers are shipped to outside markets and a good profit realized.

Horse-raising has, in most instances, proved to be lucrative, especially so for the most useful classes, such as good draught and saddle horses.

The stock-growers of the Territory, realizing that it costs as much to raise and market inferior animals as it does to raise those of a better class, are improving their herds by the importation of thoroughbred animals of the different classes.

I append hereto a carefully-prepared estimate, obtained through correspondence with the best-informed stock-raisers in every county, of the total number of all stock of different classes and grades in the Territory.

Total stock of all kinds.

Kind.	Number.	Value per head.	Total value.
Bulls, thoroughbred	1,400	\$125.00	\$175,000
Cows, thoroughbred	1,440	125.00	180,000
Bulls, graded	4,322	60.00	259,320
Cows, graded	27,067	25.00	676,675
Range cattle	350,225	12.00	4,202,700
Oxen	1,442	40.00	57,680
Horses, thoroughbred	1,113	400.00	445,200
Horses, graded	21,428	80.00	1,714,240
Horses, native	101,263	30.00	3,037,890
Mules	2,480	60.00	148,800
Jacks and jennies	206	20.00	6,180
Sheep, imported	3,150	20.00	63,000
Sheep, graded	65,500	3.00	196,500
Sheep, common	378,274	1.50	567,511
Angora goats	5,565	2.00	11,130
Hogs	28,074	5.00	140,370
Total			11,882,196

Abstract of live-stock, classified as returned by the assessors for the year 1889.

Counties.	Horses, thoroughbred.		Horses, graded.		Horses, American.	
	No.	Value.	No.	Value.	No.	Value.
Ada	30	\$9,000	100	\$3,000	7,915	\$229,350
Alturas	7	1,125			1,521	43,822
Bear Lake	10	3,000	200	9,600	3,057	71,303
Bingham	4	800	37	3,700	8,139	194,793
Boisé	29	3,320			2,979	74,170
Cassia	12	2,900	41	4,830	6,287	143,795
Custer	4	1,500			4,739	90,995
Elmore					2,365	66,493
Idaho	90	9,415			8,418	151,918
Kootenai	4	1,150	257	13,100	581	25,200
Latah	42	7,350	65	4,875	5,337	190,740
Lemhi	4	2,000	1,000	37,953	2,391	59,775
Logan					3,731	97,547
Nez Percés	18	1,900	3,216	66,173	756	30,775
Oneida			3,857	96,425		
Owyhee					10,375	236,325
Shoshone					450	18,000
Washington	10	5,000	3,904	97,600		
Total	264	48,460	12,677	337,256	69,041	1,725,001

Counties.	Sheep.		Hogs.		Jacks and jennies.		Mules.	
	No.	Value.	No.	Value.	No.	Value.	No.	Value.
Ada	30,000	\$60,000	1,195	\$3,585			160	\$7,200
Alturas	6,277	9,416	92	353			140	5,458
Bear Lake	1,240	2,258	583	1,512			30	1,200
Bingham	3,772	5,664	780	3,229	7	\$1,125	102	4,080
Boisé			694	2,811			71	2,965
Cassia	36,070	72,140	400	1,341	2	600	193	5,710
Custer	20,336	30,504	200	1,000			341	13,640
Elmore	28,660	57,778	138	666				
Idaho	6,568	6,568	3,302	8,812	1	50	92	1,976
Kootenai	20	25					55	3,145
Latah	400	400	3,020	6,040			67	268
Lemhi	1,500	2,285			4	12		
Logan	5,799	9,097	263	967				
Nez Percés	15,025	18,710	1,000	2,039			83	3,280
Oneida	40,946	61,419			125	2,500	6	135
Owyhee	77,000	123,200	400	3,200	3	30	120	4,500
Shoshone	300	450	200	800			50	3,750
Washington	33,387	68,124					51	1,785
Total	307,300	528,038	12,267	36,355	142	4,317	1,561	59,092

Abstract of live-stock classified as returned by the assessors for the year 1889—Continued.

Counties.	Bulls, thoroughbred.		Cows, thoroughbred.		Calves, graded.		Cows, graded.	
	No.	Value.	No.	Value.	No.	Value.	No.	Value.
Ada.....	200	\$7,500	250	\$7,500	.....	.....	250	\$5,000
Alturas.....	.....	.....	.....	.....	100	\$2,700	12	470
Bear Lake.....	.....	.....	.....	.....	.....	.....	100	5,000
Bingham.....	.....	.....	.....	.....	.....	.....	.....	.....
Boisé.....	.....	.....	.....	.....	.....	.....	.....	.....
Cassia.....	.....	.....	10	1,200	248	1,772	110	2,395
Custer.....	.....	.....	85	3,400	.....	.....	.....	.....
Elmore.....	.....	.....	.....	.....	.....	.....	.....	.....
Idaho.....	40	2,355	32	1,550	.....	.....	836	16,705
Kootenai.....	2	150	.....	.....	.....	.....	.....	.....
Latah.....	30	1,701	7	325	2,105	12,630	8	340
Lemhi.....	15	750	15	750	.....	.....	360	8,910
Logan.....	.....	.....	.....	.....	.....	.....	.....	.....
Nez Percés.....	.....	.....	.....	.....	445	3,570	.....	.....
Oneida.....	.....	.....	.....	.....	.....	.....	6,608	105,728
Owyhee.....	.....	.....	.....	.....	.....	.....	.....	.....
Shoshone.....	.....	.....	.....	.....	.....	.....	125	3,125
Washington.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	287	12,456	399	14,725	2,898	20,672	8,409	147,673

Counties.	American.		Range.		Oxen.		Beef cattle.	
	No.	Value.	No.	Value.	No.	Value.	No.	Value.
Ada.....	1,000	\$20,000	10,940	\$103,180	.....	.....	2,000	\$40,000
Alturas.....	272	5,168	2,394	31,434	44	\$1,500	.....	.....
Bear Lake.....	.....	.....	9,810	100,346	20	1,000	.....	.....
Bingham.....	2,040	30,600	25,126	299,510	10	700	.....	.....
Boisé.....	738	18,450	5,772	78,995	38	1,055	158	3,790
Cassia.....	710	14,215	26,640	346,320	112	2,795	.....	.....
Custer.....	176	4,400	11,811	141,732	.....	.....	.....	.....
Elmore.....	.....	.....	11,929	142,638	.....	.....	.....	.....
Idaho.....	.....	.....	13,583	202,114	12	290	.....	.....
Kootenai.....	1,057	26,425	1,523	18,815	55	2,570	.....	.....
Latah.....	2,623	39,345	2,266	23,649	143	3,075	127	2,005
Lemhi.....	.....	.....	10,581	137,553	10	267	.....	.....
Logan.....	.....	.....	10,554	136,107	.....	.....	.....	.....
Nez Percés.....	1,101	18,469	4,280	50,139	.....	.....	.....	.....
Oneida.....	.....	.....	6,500	78,000	13	208	.....	.....
Owyhee.....	.....	.....	31,000	341,000	.....	.....	.....	.....
Shoshone.....	75	.....	275	4,125	16	400	125	2,812
Washington.....	.....	.....	15,973	183,689	.....	.....	.....	.....
Total.....	9,792	177,072	200,957	2,419,346	473	13,860	2,410	48,607

NOTE.—The live stock for the present year has not been properly classified as required by law, and the returns do not exhibit over 46 per cent. of its value.—COMPTROLLER.

MINING.

Mining is the principal industry of the Territory, and goes hand in hand with our growing agricultural industry. To the mines is due the first stimulus that was given to immigration. And now that mining has become as legitimate an occupation as farming, stock raising, or any other occupation, there is less of that reckless speculation than there was a few years past. The past year has been one of hardship to many who are engaged in working placer or surface mines, caused by the unprecedented light fall of snow in the mountains last winter, thereby producing little water for this class of mining, and in some localities the supply was so light that the mines have not been touched this season. With an average water supply through the season the output of gold and silver would have been increased at least \$2,000,000 more than the amount reported.

A number of quartz-mills have been shut down for some months from the same cause. Notwithstanding the short supply of water, and the falling off of production in some localities, the yield of valuable metals in the Territory at large is most satisfactory, and is nearly double that of last year. The large increase comes from Shoshone County, where we have now developed some of the finest mines known to exist. Some of the mines have been developed for some time, but the owners were content to wait the completion of a railroad near them. The high per cent. they carry in lead contributes to make the tonnage very large. From the present outlook, the production next year of gold, silver, lead, and copper will be increased over this by several million dollars.

I am sincere in stating that I believe Idaho will, in a few years, lead the list of States producing gold, silver, and lead.

Large copper mines have been opened in the Seven Devils district, in Washington County; also on Big and Little Lost Rivers and Birch Creek, in the counties of Alturas, Bingham, and Custer. These mines, while high grade, are too far from railroads to be worked with much profit at present. Railroad companies are looking over the field with the view of constructing lines to them.

I append a table giving the production of metals for the year by counties.

Total production of gold, silver, lead, and copper in Idaho for 1889, prepared from the reports of producers and other authentic sources.

Counties.	Value of gold.	Value of silver.	Value of lead, at 4 cents per pound.	Value of copper, at 10 cents per pound.	Total value.
Ada	\$5,500	\$500			\$6,000
Alturas	155,000	620,000	\$275,000		1,050,000
Bingham	55,000				55,000
Boisé	365,000	253,000			618,000
Cassia	35,000				35,000
Custer	460,000	2,100,000	160,000	\$25,600	2,745,600
Elmore	375,000	22,000			397,000
Idaho	475,000	35,000			510,000
Kootenai	30,000	60,000	55,000		145,000
Lemhi	425,000	274,000	400,000		1,099,000
Logan	57,000	320,000	80,000		457,000
Owyhee	155,000	345,000			500,000
Shoshone	600,000	3,510,000	5,520,000		9,630,000
Washington	12,000	25,000		60,000	97,000
Total	3,204,500	7,564,500	6,490,000	85,600	17,344,600

Productions of the valuable metals in Idaho annually to date.

1862	\$5,000,000.00	1877	\$3,474,787.69
1863	7,448,400.91	1878	2,657,216.91
1864	9,019,704.30	1879	2,553,634.58
1865	12,914,364.25	1880	1,634,637.19
1866	10,001,850.44	1881	4,915,100.00
1867	7,388,064.31	1882	5,500,000.00
1868	3,030,213.56	1883	5,000,000.00
1869	1,613,453.68	1884	6,500,000.00
1870	2,239,190.61	1885	5,755,602.00
1871	2,219,937.94	1886	9,679,500.00
1872	2,675,192.00	1887	9,245,589.00
1873	3,653,605.15	1888	8,905,136.00
1874	3,100,447.69	1889	17,344,600.00
1875	1,983,720.27		
1876	2,267,013.36		
		Total productions .	157,720,962.84

FORESTS AND THE PRODUCTION OF LUMBER.

Probably in no other Territory in the United States are there larger forest belts than within the limits of Idaho.

Although destructive fires have been raging during the past summer throughout the Northwest, and particularly in this Territory, which have destroyed millions upon millions of feet of this magnificent timber, yet there are countless millions left.

I think it would be wise, and I earnestly recommend, that Congress take steps to prevent the destruction of these valuable belts of timber by fire by passing suitable laws looking to their preservation.

It would be a judicious policy for Congress to provide, by proper legislation, for the appointment of local agents or supervisors whose duty it should be to look after the large timber belts of the West, and especially the Northwest, with authority to employ men to extinguish forest fires and to arrest those responsible for this destruction of our forests.

Although there is a very stringent law on our statute books prohibiting the leaving of camp-fires in these forests without thoroughly extinguishing the same, yet every season many thousands of dollars' worth of the finest timber to be found in the West is destroyed through the carelessness of parties who negligently and often maliciously leave their fires to consume acres upon acres of valuable Government timber.

In places the forests consist of what is known as lodge-pole or black pine, which measures in diameter about 6 to 18 inches, and grows to a height of from 60 to 100 feet. They grow so close together it is almost impossible to pass between the trees. It is generally used for buildings, fencing, mining-timbers, etc. In other localities in Idaho very large belts of fir, cedar, spruce, and yellow pine grow in abundance, which measure from 2 to 5 feet in diameter and from 50 to 75 feet in height without a limb, and from 100 to 200 feet in height.

In Boisé, Lemhi, Custer, Alturas, Elmore, Bingham, and Washington Counties are extensive forests. The finest timber belts in these counties are on the Boisé, Weiser, Payette, Salmon, and Snake Rivers and their tributaries. These forests consist of white pine, fir, spruce, yellow pine, and black pine, with a limited quantity of cedar, cottonwood, and mountain mahogany. In the counties of Kootenai, Shoshone, and Idaho the timber is of large growth and very valuable, consisting mainly of white and yellow pine and red and yellow fir. Spruce, tamarack, and cedar grow abundantly, while silver birch, yew trees, and mountain mahogany exist in limited quantity. In these counties cedars attain

a marvelous height and thickness. The same may be said of tamarack and pine. This is undoubtedly the largest and finest belt of timber in the Territory.

Nez Perces and Latah Counties have fine forests of the above varieties, but with a much less area. I have estimated the area classified as forest lands at 10,000,000 acres. On lands classified as grazing there is a large quantity of excellent timber, while on the area of 8,000,000 acres classified as rough and mountainous are millions of fine trees.

The quantity of timber in the Territory, when reduced to feet, is beyond calculation, and if properly protected will produce sufficient lumber and fuel for this and neighboring States and Territories for hundreds of years to come.

EDUCATION AND SCHOOL LANDS.

The public schools of the Territory are in a prosperous condition and an honor to the Territory.

Hon. C. C. Stevenson, superintendent of public instruction for the Territory, in his very complete report of the condition of the public schools of the Territory for the year ending August 31, 1889, shows the following gratifying gains:

Increase of children of school age.....	4, 077
Increase of children enrolled.....	2, 225
Increase of school districts.....	48
Increase of school-houses.....	40
Increase of schools.....	69

For general information I append the annual report of the superintendent:

DEPARTMENT OF PUBLIC INSTRUCTION OF IDAHO TERRITORY, OFFICE OF TERRITORIAL SUPERINTENDENT, *Boisé City, Idaho, October 7, 1889.*

SIR: In compliance with your request, I have the honor of submitting a special report of the condition of the public schools of Idaho for the school year ending August 31, 1889.

The school system of Idaho is in its infancy, and, like all infants, requires considerable care and attention in order to place it on the high road to the full vigor of life. Obviously imperfect in many particulars, it nevertheless reflects great credit upon the founders of this future commonwealth, and beyond all other things gives evidence of Idaho's coming greatness.

The old district school system is the one in operation, wherein the affairs of each district are under the control of a board of three trustees, elected by the voters of the district for terms of one, two, and three years respectively. In this way a rotation of office is established which protects the school from those sudden changes so characteristic of school districts and their elections. This board has full power to employ teachers, fix salaries, and transact all other business appertaining to the maintenance of the district schools. School elections are held annually on the first Monday of September for the purpose of electing one trustee, and are conducted in the same manner as general elections. Many districts neglect to hold elections, not so much for lack of interest as for the reason that the election day occurs in the busy season of the year, rendering it very difficult for farmers to attend. The trustees are required to visit the school once each month, and the benefit derived is very marked in districts where the provision is strictly adhered to by the intelligent trustees.

Each county of the Territory has a county superintendent, elected at the general election, to whom the trustees must annually report on the first day of September. The county superintendent disburses the school fund, which is raised by direct taxation, by issuing requisitions on the county auditor, who in turn draws his warrant on the county treasurer. All funds, both general and special, are in the hands of the treasurer, who pays them out in the manner before indicated. The county superintendent has the power of withholding all moneys from any district which neglects or refuses to comply with the law. He is required to visit each district annually to examine candidates for teacher's licenses; to hold teacher's institutes; to apportion all school moneys; to report annually, on or before the 15th day of October, to the Territorial superintendent of public instruction, and to exercise a general supervision over

the schools of his county, as required by the general school laws and the orders of the Territorial superintendent.

Altogether, it is a very important position, much more than many people imagine. The abler and more energetic a county superintendent, the better and more thorough will be the school. Our future depends upon the soundness of our schools, and the efficiency of the schools depends largely upon the efforts of the superintendents. The people should be very careful in selecting these officers, and should endeavor to obtain the very best material for the position. The plan proposed and advocated by many in favor of making the probate judge ex-officio county school superintendent would be very detrimental to the best interests of the school system. Education should not be subordinated or consolidated with any other branch of government, but should be entirely independent of any other interest, held sacred and esteemed as the great bulwark of our Government.

If county superintendents would do all that the course of education requires of them, they would find their time fully occupied. It is apparent that increase of population will bring with it an increase of labor and consequent responsibility, and a demand for the highest talent obtainable. As a State, the school fund will be richly endowed by the General Government, rendering it entirely capable of maintaining a school system fully equal to and in harmony with the most approved educational systems of these latter days, so marked by educational improvement.

The Territorial superintendent of public instruction is appointed by the governor, by and with the advice and consent of the legislative council, and is given the general superintendence of the public schools of the Territory; is required to report the condition of the public schools to the governor; to prepare and have printed and distribute all blanks required throughout the Territory; to decide all disputed points in school law, which decisions have the force of law until reversed by the courts; to visit each county annually; to lecture at county institutes, and to perform all other duties required by law and the exigencies of the school system.

In order to prepare this report in time to be of use to you, I was compelled to request the county superintendents to transmit their reports a little earlier than usual. Nearly all of them have complied with my request, and are to be complimented for their neatness and accuracy. From the latest reports I have compiled the following statistics:

Table of statistics for school year beginning September 1, 1888, and ending August 31, 1889.

Counties.	Number of districts.	Number of school-houses.	Number of schools.	Scholars enrolled.	Number of libraries.	Number of volumes.	Number of boys of school age.	Number of girls of school age.	Total number of children of school age.	Receipts.	Expenditures.	Balance on hand in all funds.	Monthly wages of teachers.
Ada.....	38	37	50	1,754	3	804	1,224	1,180	2,404	\$29,885.46	\$27,289.20	\$2,596.26	\$30 to \$80
Alturas.....	11	6	16	526	6	705	360	320	680	13,974.34	13,399.56	574.78	50 to 150
Bear Lake.....	16	4	16	702	..	..	1,083	955	2,038	3,961.65	3,324.81	636.84	24 to 75
Bingham.....	45	22	57	2,189	5	99	2,227	1,994	4,221	27,311.84	23,160.69	4,435.61	35 to 100
Boisé.....	19	19	21	457	1	11	423	374	797	12,128.34	9,088.65	3,039.69	40 to 100
Cassia.....	25	19	27	917	..	..	753	695	1,448	9,951.96	7,098.50	2,853.46	25 to 60
Custer.....	11	5	11	232	..	..	188	178	366	6,897.32	5,171.22	1,726.10	60 to 99
Elmore.....	7	6	6	14	..	..	187	184	371	5,088.50	..	5,088.50	40 to 85
Idaho.....	21	13	23	588	..	..	452	392	844	5,367.60	4,592.58	867.62	30 to 92
Kootenai.....	12	10	10	254	..	..	352	316	668	4,005.30	3,909.59	95.60	30 to 75
Latah.....	54	46	67	1,101	..	..	1,515	1,338	2,953	11,177.84	9,379.94	1,797.90	30 to 50
Logan.....	22	19	28	856	1	125	648	610	1,258	15,110.28	16,757.53	1,647.25	40 to 140
Lemhi.....	10	8	11	294	..	..	280	283	563	5,207.32	3,698.85	1,508.47	60 to 100
Nez Perces.....	13	12	17	419	1	100	456	454	910	10,659.28	8,238.95	2,780.73	30 to 125
Oneida.....	28	22	28	1,221	1	11	1,251	1,196	2,447	6,807.05	4,858.16	1,948.89	25 to 60
Owyhee.....	12	14	13	193	1	310	172	164	336	14,506.23	7,938.44	6,567.79	60 to 125
Shoshone.....	12	11	11	260	2	46	279	266	545	8,534.37	5,908.70	2,415.32	50 to 100
Washington.....	29	21	26	701	..	..	567	577	1,144	8,197.37	6,764.55	1,540.69	25 to 62
Total.....	385	294	434	12,678	21	2,211	12,386	11,685	24,071	198,782.05	160,579.92	42,121.50	

NOTE.—Elmore and Logan Counties were created out of Alturas County by the last legislature.

SUMMARY.

Total number of school districts	385
Total number of school-houses	294
Total number of schools	434
Total number of scholars enrolled	12,678
Total number of school libraries	21
Total number of volumes in libraries	2,211
Total number of boys of school age	12,386
Total number of girls of school age	11,685
Total number of children of school age	24,071
Amounts received for school purposes	\$198,782.05
Amounts expended for school purposes	\$160,579.92
Balances on hand in county treasuries*	\$42,121.50
Highest monthly salary of teacher in the Territory—Alturas County	\$150.00
Lowest monthly salary of teacher in the Territory—Bear Lake County	\$24.00
Estimated number of children not enumerated in this year's census, including those not of school age	9,000
Total minor population	33,041

GAINS.

The year has been one of unusual prosperity, not only to the school system but also to all other interests in the Territory. The educational increase has been so marked that a table of "gains" has been inserted to show the public how Idaho is forging ahead. These gains are made over the year ending August 31, 1888.

Counties.	Districts.	School-houses.	Schools.	Scholars enrolled.	Libraries.	Volumes in libraries.	Number of boys (increase).	Number of girls (increase).	Total number of school children (increase.)	Receipts (increase).	Expenditures.
Ada	1	7	1	44	1	3	14	2	16	\$110.22	
Bear Lake	1	...	2	16	...	...	79	45	124	1,054.56	\$317.46
Bingham	19	...	27	1,113	2	...	1,010	887	1,897	8,178.33	9,278.38
Boisé	4	3	5	96	...	...	71	58	129	2,854.81	2,372.35
Cassai	1	...	2	50	...	...	49	49	98	900.98	99.93
Custer	1	...	4	64	...	...	18	36	54	2,416.00	1,671.87
Idaho	1	1	1	254	...	...	60	46	106	2,811.54	1,461.95
Kootenai	5	4	4	433	...	...	285	238	523	2,263.28	1,841.08
Latah	8	5	13	30	...	...	329	272	599	8,300.77	7,534.31
Lemhi	1	...	1	...	...	...	55	56	101	1,096.12	370.17
Nez Perces	1	1	4	113	1	100	75	126	201	2,314.36	499.94
Oneida	3	13	1	88	1	11	6	55	61	881.73	...
Owyhee	1	1	...	...	...	10	7	16	23	1,168.94	497.97
Shoshone	1	1	2	42	2	46	9	33	42	1,939.92	1,022.06
Washington	1	1	3	8	...	...	249	25	274	1,816.76	1,870.28

NOTE.—Alturas County having been divided into three counties by legislative enactment, it could not be compared, and does not appear in the above table of "gains."

SUMMARY OF GAINS.

Total increase in number of districts	48
Total increase in number of school-houses	40
Total increase in number of schools	69
Total increase in number of scholars enrolled	2,225
Total increase in number of libraries	9
Total increase of number of volumes in libraries	414
Total increase in number of boys	2,096
Total increase in number of girls	1,981
Total increase in number of children of school age	4,077
Total increase of receipts	\$34,049.50
Total increase of expenditures	\$21,917.36
Percentage of increase of school children in Territory	20½

The above are based on actual reports into which estimates are not allowed to intrude. A census of school children is taken annually, and the above gain in the number of school children is absolutely correct.

In order to afford opportunity for comparison, I present the following table of statistics, prepared from reports of county school superintendents for school year ending August 31, 1888.

* This includes all moneys raised for special purposes, not accounted for in the receipts.

Table of statistics for school year commencing September 1, 1887, ending August 31, 1888.

Counties	Number of district.	Number of school-houses.	Number of schools.	Number of scholars.	Number of libraries.	Number of volumes.	Number of boys between 5 and 21 years of age.	Number of girls between 5 and 21 years of age.	Total number of children between 5 and 21 years of age.	Total receipts.	Total expenditures.
Ada.....	38	30	49	1,710	2	801	1,210	1,178	2,388	\$29,775.24	\$27,497.01
Alturas.....	40	26	25	1,559	6	565	1,382	1,286	2,668	38,049.60	36,404.99
Bear Lake.....	15	4	14	686	.....	.....	1,004	910	1,914	2,907.09	3,007.35
Bingham.....	26	22	30	1,076	3	120	1,217	1,107	2,324	19,183.51	13,882.31
Boisé.....	15	16	16	361	1	11	352	316	668	9,273.53	6,716.30
Cassia.....	24	19	25	867	.....	.....	764	646	1,350	9,050.98	6,998.57
Custer.....	10	7	9	168	.....	.....	170	142	312	4,481.32	3,499.35
Idaho.....	20	12	22	510	.....	.....	392	346	738	2,556.06	3,130.63
Kootenai.....	7	6	6	.....	.....	.....	67	78	145	1,742.12	2,068.51
Latah.....	46	41	54	668	.....	.....	1,188	1,066	2,354	2,877.07	1,845.63
Lemhi.....	9	8	10	264	.....	.....	225	227	452	4,303.44	3,328.68
Nez Perce.....	12	11	13	306	.....	.....	381	328	709	2,082.70	1,528.28
Logan.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,262.22	6,200.73
Oneida.....	25	9	27	1,133	.....	.....	1,245	1,141	2,386	5,925.32	5,332.84
Owyhee.....	11	13	13	214	1	300	165	148	313	13,337.29	7,440.47
Shoshone.....	11	10	9	218	.....	.....	270	233	503	6,594.45	4,886.64
Washington.....	28	20	23	693	.....	.....	318	552	870	6,580.61	4,894.27
Total.....	337	254	365	10,433	12	1,797	10,290	9,704	19,994	164,732.55	138,662.56

NOTE.—Estimated number of children not enumerated, 8,000

INCREASE IN SCHOOL POPULATION.

The files of this office show that the population of school age has been as follows:

Year.	Number of school children.	Year.	Number of school children.
1870.....	888	1880.....	6,698
1871.....	1,596	1881.....	8,193
1872.....	1,909	1882.....	9,650
1873.....	3,473	1883.....	10,936
1874.....	4,010	1884.....	13,140
1875.....	3,852	1885.....	15,399
1876.....	(*)	1886.....	17,372
1877.....	4,028	1887.....	19,994
1878.....	4,942	1888.....	24,071
1879.....	4,855		

* No complete report.

TEACHERS.

The teachers of Idaho are generally able and wide awake. The majority take pride in their profession, and devote their best energies to the development of the young. I call to mind one principal in a railroad town who has organized a night school for the benefit of those young ladies and gentlemen who are prevented from attending school during the day.

Our county superintendents are more strict now than formerly in teachers' examinations, the notice now being that the uninformed need not apply. Many of our most careful and painstaking teachers, however, have not had the advantages of normal school and institute instruction, and of course are in a great measure ignorant of the best and most improved methods of education. In time these advantages will be presented to them. For the present we are endeavoring to induce them to subscribe for the best educational publications, and in this way hope to bring about a marked improvement.

The following is a tabular statement of the number of teachers now holding certificates in each county:

County.	Number.	County.	Number.
Ada	34	Latah	48
Alturas	34	Logan	13
Bear Lake	23	Lemhi	10
Bingham	35	Nez Perce	18
Boisé	17	Oneida	30
Cassia	25	Owyhee	16
Custer	9	Shoshone	11
Elmore	7	Washington	25
Idaho	24		
Kootenai	9	Total	388

The highest wages (monthly) paid are \$150. The lowest, \$24. Average monthly wages in the Territory, \$49. Longest term of school, nine months. Shortest, three months. Average length, five and one-half months.

Under the law each district must hold three months of school each year or forfeit its apportionment of the public-school money. Teachers generally board with families contiguous to the school. During the year the question arose whether Mormons were legally qualified to teach school. I decided that inasmuch as the law declared that no certificate should be granted to any person who is not known to be a law-abiding citizen and of good moral character, it was the duty of the county superintendent to reject any applicant who failed in the above particular, notwithstanding the fact that the applicant had passed a satisfactory examination; that all persons who indulged in practices prohibited by law, or who belong to, or aid, support, or assist in the support of, or encourage any order, organization, or association that teaches such practices so prohibited by law, or who teach, counsel, or advise any person to belong to such an order or organization, were not law-abiding citizens within the meaning of the law, and could not be allowed to teach in the public schools or draw public money.

TEACHERS' CERTIFICATES.

No person is permitted to teach in the public schools unless such person has a Territorial or county certificate.

County certificates are of two grades—first and second. Branches required for a county certificate are: Orthography, reading, penmanship, arithmetic, grammar, modern geography, history of the United States, physiology and hygiene, and book-keeping.

A first grade, valid in the county for two years, is granted to those who answer correctly not less than 75 per cent. of the questions asked in any one branch, and not less than 90 per cent. of the general average. Second grade, valid for one year, not less than 50 per cent. in any one branch, and not less than 75 per cent. general average.

Total number of male teachers holding first-grade certificates	94
Total number of female teachers holding first-grade certificates	103
Total number of male teachers holding second-grade certificates	79
Total number of female teachers holding second-grade certificates	112
Total number of male teachers	173
Total number of female teachers	215

TERRITORIAL CERTIFICATES.

During the year I have granted three Territorial certificates. Total number now out, twenty-seven. They are valid for five years and entitle the holders to teach in any county in the Territory. The branches required for a Territorial certificate are: Written arithmetic, United States history, reading and elocution, English grammar, common and physical geography, geology, physiology, natural philosophy, algebra, plane geometry, general history, political economy, civil government, and the theory and art of education.

TEMPERANCE.

The act of Congress of May 20, 1886, concerning the teaching of the effects of alcoholic drinks and narcotics upon the human system is generally enforced throughout the Territory. The opposition at first encountered has gradually subsided and now all seem to recognize the value of such instruction. The text-books most commonly in use are Smith's and eclectic physiologies, and the Pathfinder series.

SCHOOL BOOKS.

A series of text-books having been once adopted by the board of county commissioners and county superintendent, must remain in use and are not subject to change for four years. No two counties in the Territory have the same books in use, and some are using inferior works for the reason that the county commissioners were not qualified to make such selections. It would be much better if we had the same provision now in operation in many of the States—of one universal system for the whole Territory. A Territorial board of education could select the series after careful examination of all books offered, and thus secure to all of the counties the advantages of the latest and best text-books. This, however, is not the place to enlarge upon such an opinion.

BOISE CITY INDEPENDENT SCHOOL DISTRICT.

Through the kindness of Hon. Charles Himrod and Joseph Perrault, clerk of the board of trustees, I am enabled to present the following statistics relative to said district :

Number of schools	10
Number of scholars enrolled	600
Library	1
Number of volumes	800
Length of school during the year—months	9
Number of boys of school age	360
Number of girls of school age	362
Total number of children of school age	722
Receipts	\$15,514.62
Expenditures	\$15,514.62

Names of teachers employed during year: J. W. Daniels, A. M., principal; Miss T. O. Gustison, Miss Truax, Miss Lomax, Miss Jennie Gustison, Miss Grant, Miss Simpson, Miss Bredchoff, Miss Bibbins, Miss Glew, Miss Julia Capwell.

This school district was organized under a special charter granted by the Territorial legislature, and is entirely independent of school officers, both Territorial and county. The board of trustees, at present consisting of Richard Z. Johnson, C. W. Moore, Joseph Perrault, Charles Himrod, John Lemp, and William H. Nye, have full power to examine teachers as to their qualifications, employ and discharge at will, disburse moneys, and transact all business necessary for the maintenance of public schools in said district. In addition to the amount of the county apportionment, a considerable revenue is derived from special district taxes.

The school is graded and consists of high school, academic, grammar, intermediate, and primary departments.

Great care and attention is taken to make this educational institution one of unusual excellence, and it reflects great credit upon the people of Boise City.

Observant and energetic boards of trustees, intelligent and painstaking corps of teachers, and excellent discipline have placed this high school up in scale of excellent public schools, and have evoked for it universal admiration.

The following is a list of the text-books now adopted and in use in these city schools :

Appleton's and Barnes's readers, Watson's spellers, Spencerian writing, Barnes's geographies, Swinton's language and grammar, Tuft's music, Smart's calisthenics, Prang's drawings, Davies's arithmetics, geometry (Legendre) and trigonometry, Hutchinson's and Smith's physiologies, Bryant & Stratton's book-keeping, Quackenbos's natural philosophy, Geike's geology, Gray's botany, Daniel's diagrams, English analysis, Huxley's political economy, Davies's algebras (Bourdon and elementary), Allen's civil government and moral philosophy, Harkness's Latin, Craik's English literature, and Quackenbos's United States and general histories.

DISTURBANCES.

In the southern counties, commonly known as the Mormon counties, there is a decided opposition to the public school system manifested by members of the organization known as "The Church of Jesus Christ of Latter-Day Saints," or Mormons.

This sect, dominating the souls, minds, and actions of its devotees, has used and is still using its influence against the successful operation of the school laws. Many Mormons refuse to send their children to school unless the teacher is of the same faith. Every Mormon from childhood up is a teacher, compelled to teach their peculiar doctrines to all who will listen, especially to those under him. This being the case, it is no wonder that "Gentiles" refuse to allow their children to be placed under such influences. Thus the public school is between two fires, but is gradually getting out. The strong hand of the law is too powerful for such a state of affairs to

last long, and soon the cause of free education will shed its light in the dark paths of intolerance and priestcraft. The school offices are gradually getting into the control of the "Gentiles," and the result in each district is an awakening of educational interest.

An act was passed at the last session of the legislature compelling all who withdrew from such an organization to declare their intentions before the clerk of the district court, and they can not vote until two years have elapsed thereafter. This is made applicable to all elections.

SCHOOL-HOUSES.

During the school year ending August 31, 1889, it has been very gratifying to observe the awakened interest regarding the building of new and commodious school-houses. As will be seen in an accompanying table, there has been an increase of thirty-five school-houses, and they, for the most part, have been erected on sites the title of which is vested in the district. There seems to be a growing desire for the districts to own the realty. A great many districts have erected their school-houses on Government land, from which it can be and is often moved at the whim of the board of trustees. When, however, the district owns the land, the building is anchored, so to speak, and the grounds become the subject of ornamentation and decoration. Thousands of trees were planted with interesting ceremonies on Arbor Day, which in a few years will beautify and adorn these temples of education. The law provides that whenever a majority so decides, the board of trustees may submit to the resident freeholders, or heads of families of the district, the question whether the district shall issue bonds for the erection of a school-house, to a certain amount not to exceed 4 per cent. of the taxable property of the district. The bonds bear interest not to exceed 8 per cent. per annum. It requires two-thirds of the votes cast at such election in order to vote these bonds. I concur with Hon. S. W. Moody, my able predecessor in office, in his views in 1888 that the property qualification should be abrogated. In this new country, many of our enterprising and intelligent citizens are living on claims not yet patented, and hence, not being freeholders, can not vote, thus often leaving the election to depend upon the decision of wealthy residents, who refuse to tax their own property. In this free land of America every man should be allowed to cast his vote untrammelled, for although he may be poor to-day, he may, as is often the case in the "Golden West," be rich as Cræsus to-morrow. This provision was inserted for the purpose of protecting wealth and capital against the rapacious demands of destitute citizens, notwithstanding the fact that these demands could be only made for the benefit of education, in providing school children with a comfortable and commodious school-house. Wealth can always protect itself, but education and the schools often need the poor citizen to protect them against wealth. As a rule, our wealthy citizens, much to their credit, are very liberal to the schools and furnish not only money but personal efforts to make the school system a success. Many of our districts are poor and, not possessing sufficient taxable property, must forego the luxury of a school-house. In some counties there is a decided opposition to the public schools, unless they are in control of the religious denomination which is most numerous. Many school-houses are erected by popular subscriptions, and are used alike for school and religious purposes. In many districts the buildings are owned by religious organizations and are rented by the district. In Bear Lake County, twelve out of the fifteen districts rent buildings from the peculiar sect there prevalent and dominating. Five are thus rented in Oneida County. Under such circumstances the power of the church is thrown against the erection of public school-houses, and the course of public education is trampled under the foot of religious fanaticism.

With the patenting and improvement of settlers' claims and the attendant increase of wealth the condition of education improves, and ere long we hope to see the rays of education and enlightenment darting from the windows of large and comfortable school-houses in each and every district.

IMPROVEMENTS.

Probably the most substantial and beautiful educational structure in Idaho is situated at Boise City, being the property of an independent district. Hailey and Bellevue are not far behind. Lewiston and Moscow possess large three-story frame buildings, endowed with all of the latest improvements. Beautiful and creditable school-houses have been erected at Caldwell, Shoshone, Idaho City, Ketchum, Pocatello, Blackfoot, Eagle Rock, Salmon City, Genesee, and Albion. Elegant buildings are under process of construction at Rathdrum, Weiser City, and other points. Many districts are adding the latest globes, physiological and historical charts, geographical maps, dictionaries, and other appliances. I found every school in Shoshone County fully equipped with the above-named articles.

The estimated value of improvements made during the year is not far from \$65,000, which, added to \$279,500, the value of school property in 1888, enables a total valuation of buildings, school-sites, and buildings in process of erection, of \$344,500.

Statement of towns owning creditable school-houses, with cost of same.

Town.	County.	Cost.	Town.	County.	Cost.
Boisé City	Ada	\$60,000	Weiser City	Washington.....	\$8,000
Hailey	Alturas	25,000	Caldwell.....	Ada	7,000
Lewiston	Nez Perce.....	10,000	Coeur d'Alene	Kootenai	6,000
Belleville.....	Logan.....	8,000	Moscow	Latah	12,000
Shoshone	Logan.....	8,000	Rathdrum	Kootenai	8,000
Ketchum	Alturas	8,000	Emmett	Ada	4,000

COMPULSORY EDUCATION.

There is a compulsory school law upon our statute-books which requires the parents or guardians to send their children to a public school for a period of twelve weeks in each school year, at least eight of which must be consecutive, or suffer a penalty.

The law, excellent in intention and beautiful in theory, leaves so many loop-holes that even the children can crawl through them; hence it is inoperative. A good, sound, practicable compulsory education law is needed here, as in every other State or Territory.

INDEPENDENT DISTRICTS.

The following schools have been created by special enactment, and operate now under legislative charters: Boisé City, independent district (noted elsewhere); Lewiston, independent district, in Nez Perce County, has an enrollment of 289, with a proportional attendance of 90 per cent. The estimated cost of its school building is \$10,000. The school is noted for its excellent educational facilities and the attainments of its graduates. Prof. J. Q. Moxley is the district school superintendent.

Since the creation of the above-named school a general law for the establishment of independent districts was enacted by the legislature, with a view of providing better educational facilities for special localities. Any school district which has within its limits taxable property of the amount of \$200,000 or over may be organized into an independent school district. It then has power to sue and be sued, to have a corporate seal, to hold and convey such real and personal property only as is needed for actual school purposes, and to choose such officers as are provided by law. The board of trustees have complete control within the powers delegated to them by law.

Schools organized under this law are situated at Moscow, Latah County, and Emmett, Ada County. They are both educational institutions of unusual merit, and the districts own large and substantial buildings.

GRADED SCHOOLS.

The independent district schools at Boisé City, Lewiston, Moscow, and Emmett are graded, and, in addition thereto, the following common schools are divided into two or more grades: Hailey, Ketchum, Bellevue, Shoshone, Caldwell, Weiser City, Montpelier, Blackfoot, Silver City, Idaho City, Albion, and Payette. Several of the above possess four and five grades, and are excellent schools.

INSTITUTES.

The county superintendents, in counties containing ten or more districts, are authorized to hold, annually, a teachers' institute, which must continue in session not less than two nor more than five days. The county pays the expenses.

It is made the duty of teachers to attend these county institutes, and during the session of the same all schools in the county must be closed. Much good is derived from these annual meetings, where teachers exchange ideas and opinions, give and receive instruction, and unite themselves more closely in the grand cause of education. It is customary for eminent people to lecture, usually at the evening sessions, to which the public are universally attracted. These lectures, with music, vocal and instrumental, make up very interesting programmes, and it would astonish our eastern friends to know how much enjoyment the wild westerners get out of the an-

nual teachers' institute. Large and enthusiastic institutes were held at Moscow and Lewiston during August last, and were productive of much good. Many teachers and educational patrons were in attendance from the adjoining State of Washington. Several other counties will hold institutes during the autumn and early winter.

The necessity for these educational meetings or reunions is so apparent that it has been suggested to me that a teachers' convention should be held somewhere in Idaho. The suggestion was so pertinent to the situation that I have about decided to hold a teachers' convention for Northern Idaho at Coeur d'Alene City, on the shores of the beautiful lake Coeur d'Alene, some time next summer. There is no more beautiful resort anywhere in the Northwest, and with liberal railroad rates there is no reason why a convention should not be well attended, not only by teachers, but by the public generally. Several eminent gentlemen have already signified their willingness to deliver lectures during the session, and to assist in making the convention a success.

A similar convention for Southern Idaho will be held also next summer at some resort yet to be selected.

UNIVERSITY.

An act was passed by the legislature of Idaho January 30, 1889, providing for the establishment of "The University of Idaho," and locating it at Moscow, Latah County. The government of the university is vested in a board of regents, consisting of nine members, of which Hon. Willis Sweet is president and D. H. B. Blake secretary.

The object of this university is to provide the means of acquiring a thorough knowledge of the various branches of learning connected with scientific, industrial, and professional pursuits, and to this end it shall consist of the following colleges or departments: College of arts, college of letters, and the professional or other colleges or departments as may from time to time be added thereto or connected therewith. The sum of \$15,000 was appropriated out of the Territorial treasury to commence operations.

Several meetings of the board of regents have been held, and they are awake to the requirements and responsibilities of the undertaking entrusted to their care. A beautiful site, consisting of twenty acres, has been selected and purchased. This site is situated about 1 mile from the town of Moscow, a beautiful and growing little city, on the slope of a hill facing the town, beyond which can be seen the broad and fertile valley of the Potlatch and the towering peaks of the Bitter Root Mountains. Two avenues will be constructed from the city to the university, thus affording easy access. Upon that fertile land vegetation makes rapid growth, and ere long the college campus will be embowered with leafy branches. Active operations will soon be commenced for the establishment of an educational institution which will be not only the pride of Moscow but of the whole of Idaho.

SCHOOL LANDS.

Under section 1946 of the Revised Statutes of the United States sections 16 and 36 in each township are reserved for the purpose of being applied to the public schools in Idaho. This makes 1,240 acres in each township. These lands are not available now, but are reserved until the Territory shall be admitted to statehood. Some of the lands are very valuable, being contiguous to large and prosperous settlements. They bespeak an exceedingly bright future for the public-school system of Idaho.

The following table of surveyed lands and school lands in Idaho Territory is compiled from the latest official records of the General Land Office and other sources, and is as near absolutely correct as can be made at the present time. Estimation has not been made use of, and fractional townships were not computed except where it could be done correctly; hence the totals will be considerably smaller, if anything, than the actual number. The sectionized townships generally lie in fertile districts, thus making those school lands very valuable. The remaining townships, not sectionized, comprise timber, mineral, and grazing lands, and lands not now subject to irrigation, but all of which we hope will soon be under the beneficent influence of water, which will make them extremely fertile. The table, however, shows only a small portion of the total number of acres in Idaho, as very little of the Territory has been surveyed.

Table of public lands in Idaho showing total number of acres in townships now laid off, and also the number of acres of public lands and also school lands in sectionized townships.

Counties.	Total townships, including those sectionized.	Total acres in townships, including those sectionized.	Total acres of school lands.	Sectionized townships.	Acres of public lands in sectionized townships.	Acres of school lands in sectionized townships.
Ada	71	1, 635, 840	90, 880	39	898, 560	49, 920
Alturas	28	645, 120	35, 840	18	414, 720	23, 040
Bear Lake	20	460, 800	25, 600	19	437, 760	24, 320
Bingham	159	3, 663, 360	203, 520	107	2, 465, 280	136, 960
Boisé	27	622, 080	34, 560	4	46, 080	5, 120
Cassia	77	1, 774, 080	98, 560	60	1, 382, 400	76, 800
Custer*						
Elmore	42	967, 680	, 960	23	529, 920	29, 440
Idaho	18	414, 720	23, 040	15	345, 600	19, 200
Kootenai	16	368, 640	20, 480	12	276, 480	15, 360
Latah	20	460, 800	25, 600	18	414, 720	23, 040
Lemhi	22	506, 880	28, 160	11	253, 440	14, 040
Logan	61	1, 405, 440	78, 080	32	737, 280	40, 960
Nez Perces	23	529, 920	29, 440	22	506, 880	28, 160
Oneida	41	944, 640	52, 480	32	737, 280	40, 960
Owyhee	80	1, 843, 200	102, 400	45	1, 036, 800	56, 600
Shoshone	7	161, 280	8, 960	6	138, 240	7, 680
Washington	46	1, 059, 840	58, 880	21	483, 040	26, 880
Total.....	758	17, 464, 320	970, 440	484	11, 104, 480	618, 480

* Lands not surveyed.

NOTE.—There are included in the above 1,175,040 acres of land now situated in Indian reservations, but which we hope will ere long be added to the list of marketable lands. The total number of acres of public land includes school, university, and all other grants. School lands are set apart in another column.

SUMMARY.

Total number of acres of school lands (under section 1946) in all townships..... 970, 240
Total number of acres of school lands in townships sectionized..... 632, 320

This leaves a balance of 337,920 acres in townships now laid off, but not sectionized.

UNIVERSITY LANDS.

Under the act of Congress approved February 18, 1881, entitled "An act to grant lands to Dakota, Montana, Arizona, Idaho, and Wyoming for university purposes," this Territory is entitled to 72 sections, or 46,080 acres.

The first selecting agent under this act was Hon. James L. Onderdonk, who designated a number of sections, which were accordingly withdrawn. Hon. Silas W. Moody, his successor, resigned the position February 2, 1889, after designating nearly all of the lands remaining, and I was appointed February 28, 1889.

Under instructions of the General Land Office, these lands were selected, as far as possible, in entire sections. Many sections are very valuable, some of which, located in Latah County, I have been informed, are now worth \$40 per acre. At \$10 per acre, the minimum price, they would bring in a revenue of \$460,800, which princely sum would endow the "University of Idaho" as very few young educational institutions are endowed, and enable it to offer to our youth the advantages of every profession. These lands are not available while Idaho remains under a Territorial form of government, but become the property of the new State when admitted.

The following is a list of the selections made up to the present time:

Selections made at Oxford land office, Idaho Territory.

Tracts.	Section.	Town-ship.	Range.	Acres.	Remarks.
N. $\frac{1}{2}$ N. $\frac{1}{2}$. SW. $\frac{1}{4}$ and SE. $\frac{1}{4}$.	15	20 N.	23 E.	640	Canceled as to the S. $\frac{1}{2}$ SW. $\frac{1}{4}$ by letter to register and receiver June 11, 1887.
	22	20 N.	23 E.	640	
	27	20 N.	23 E.	640	
	28	20 N.	23 E.	640	
	32	21 N.	22 E.	640	
	24	3 N.	38 E.	560	
N. $\frac{1}{2}$ and SW. $\frac{1}{4}$	35	3 N.	38 E.	640	Lot 1 and SE. $\frac{1}{4}$ of NE. $\frac{1}{4}$ covered by homestead 1410, and allowed to stand by letter to register and receiver July 2, 1886. S. $\frac{1}{2}$ of SW. sec. 29 and W. $\frac{1}{2}$ NW. $\frac{1}{4}$ sec. 32 covered by homestead entry 660 of George Rawley, January 12, 1883. Homestead allowed to stand. (See letter to register and receiver July 2, 1886.)
	19	5 N.	38 E.	635.46	
	29	5 N.	38 E.	480	
	30	5 N.	38 E.	636.78	
	34	5 N.	38 E.	640	
	21	9 S.	42 E.	640	
	11	16 S.	24 E.	640	
	13	16 S.	24 E.	640	
	28	10 S.	24 E.	578.40	
	19	15 S.	25 E.	635.34	
	24	16 S.	25 E.	640	
	25	16 S.	25 E.	640	
	26	16 S.	25 E.	640	
	35	16 S.	25 E.	640	
W. $\frac{1}{4}$	6	13 S.	43 E.	734.40	
	29	12 S.	44 E.	40	S. $\frac{1}{2}$ of SW. sec. 29 and W. $\frac{1}{2}$ NW. $\frac{1}{4}$ sec. 32 covered by homestead entry 660 of George Rawley, January 12, 1883. Homestead allowed to stand. (See letter to register and receiver July 2, 1886.)
	32	12 S.	44 E.	640	
W. $\frac{1}{4}$	15	14 S.	43 E.	320	
W. $\frac{1}{4}$	22	14 S.	43 E.	320	
	22	11 S.	43 E.	640	
Total acres				15,180.30	

Selections made at Lewiston land office, Idaho Territory.

Section.	Town.	Range.	Acres.	Section.	Town.	Range.	Acres.
9	40 N.	5 W.	640	29	31 N.	5 E.	640
12	39 N.	4 W.	640	9	33 N.	5 E.	640
9	38 N.	1 W.	640	33	33 N.	5 E.	640
27	38 N.	1 W.	640	22	31 N.	4 E.	640
11	39 N.	2 W.	640	34	29 N.	2 E.	640
14	39 N.	3 W.	640	35	29 N.	2 E.	640
21	41 N.	4 W.	640	26	51 N.	5 W.	640
22	34 N.	5 W.	640	24	53 N.	3 W.	640
25	33 N.	5 W.	640	32	53 N.	3 W.	640
35	42 N.	4 W.	640	28	51 N.	4 W.	640
28	33 N.	4 W.	640	28	52 N.	4 W.	640
24	41 N.	5 W.	640				
28	43 N.	5 W.	640				
				Total acres			15,360

Selected at United States land office at Boise City, Idaho.

Tracts.	Section.	Township.	Range.	Acres.
NE. $\frac{1}{4}$ and S. $\frac{1}{4}$ of	25	3 N	1 E	480. 00
NW. $\frac{1}{4}$ and S. $\frac{1}{4}$ of	26	3 N	1 E	480. 00
All of	27	3 N	1 E	640. 00
E. $\frac{1}{2}$ of	28	3 N	1 E	320. 00
All of	34	3 N	1 E	640. 00
All of	35	3 N	1 E	640. 00
All of, fractional	15	8 N	5 W	558. 80
All of	35	8 N	5 W	640. 00
E. $\frac{1}{2}$ of	11	3 N	5 W	320. 00
NW. $\frac{1}{4}$ of	11	3 N	5 W	160. 00
Lot 1 of	11	3 N	5 W	39. 07
Lot 2 of	11	3 N	5 W	35. 50
S. $\frac{1}{2}$ of	17	3 N	1 W	320. 00
E. $\frac{1}{2}$ of	19	3 N	1 W	320. 00
All of	20	3 N	1 W	640. 00
All of	21	3 N	1 W	640. 00
All of	22	3 N	1 W	640. 00
S. $\frac{1}{2}$	23	3 N	1 W	320. 00
All of	29	3 N	1 W	640. 00
All of	34	3 N	1 W	640. 00
All of	29	5 N	1 E	640. 00
All of	32	7 N	1 E	640. 00
All of	8	5 N	4 W	640. 00
All of	10	7 N	4 W	640. 00
All of	21	7 N	4 W	640. 00
All of	25	7 N	4 W	640. 00
All of	32	7 N	4 W	640. 00

SUMMARY.

Boisé City	12,953. 37
Lewiston	15,360. 00
Oxford	15,860. 38
Total acres	44,173. 75

There yet remain to be selected 1,906.25 acres, and also the equivalent of selections canceled by order of the General Land Office. These selections will be made within the next two months.

CONCLUSION.

This report has been extended beyond my original intention, for the reason that I have endeavored to answer in this way the many inquiries that are continually made of all Territorial departments concerning educational matters.

To all who wish to settle in Idaho I can say, unhesitatingly, that we can offer as good educational advantages as can be found in any young community, and which are continually improving under the good care of our citizens and the patronage of the General Government. With Statehood, the educational future in Idaho will be a glorious one.

Very respectfully, your obedient servant,

CHARLES C. STEVENSON,
Superintendent of Public Instruction for Idaho Territory.

His Excellency GEORGE L. SHOUP,
Governor of Idaho.

BOISÉ CITY INDEPENDENT SCHOOL DISTRICT.

This school is under the able management of Prof. J. W. Daniels, and is in a flourishing condition. The building is one of the finest structures in the Territory. The building and grounds cover a full square.

REPORT.

SIR: Consonant with your wishes, as expressed to me by the board of directors of this district, I have the honor to submit the following report of the condition of the schools under my supervision:

The pupils of this city all assemble in one central school building. The latter is of four stories, including basement, ornate in the character of both material and workmanship, and of capacity for sixteen large rooms, twelve of which are furnished and occupied for school purposes. The building is conceded to be one of the finest in the West, and, with its furnishings and apparatus, cost nearly \$100,000.

In the school district there are nearly 800 youths between the ages of five and twenty-one years. Of these, between 600 and 700 attend school more or less during the school year.

The series of schools consist of thirteen different grades, viz: Three primaries, three intermediate, three grammar, and four high-school grades, viz, juniors, middle class, senior middle, and seniors. The latter spend four years in the high school, at the end of which time they are graduated, and receive the usual testimony in the form of a diploma.

The schools are presided over by eleven teachers—a principal and ten associates. The directors aim to employ only experienced instructors, preference always being given to graduates of colleges and normal schools. The present corps of instructors and their daily work in the school-room will compare favorably with that of similar schools throughout the country.

The discipline in the schools is kind but firm—all movements of ingress and egress being semi-martial in character, accompanied by a drum played by one of the pupils.

The sexes occupy different play-grounds on opposite sides of the school building, but recite together in the different branches of study in all the grades.

The teachers are held to a strict accountability for discipline in their rooms, their own conduct in the presence of pupils, and prompt attendance to duty.

No tardiness is allowed under any circumstances; a warning and a final bell is rung, at the end of which every pupil must be in his or her seat. Teachers are required to report themselves to the principal, if they are tardy at their posts of duty, and are required to be at their rooms twenty minutes prior to opening schools.

The following are the branches pursued in our schools, including every grade: Orthography, language, music, drawing, calisthenics, numbers, geography, reading, arithmetic (mental and written), grammar, Constitution of the United States, spelling (phonetic as well as alphabetic), history United States, physiology and hygiene, general history, natural philosophy, book-keeping, algebra (elementary and Bourdon), geometry (plane, solid, spherical), trigonometry, civil government, English literature, political economy, geology, chemistry, botany, astronomy, natural history, rhetoric, moral philosophy, composition, recitation and declamation, as well as music, and reading.

It was intended originally to fit pupils for college in the classics as well as in the English and scientific courses, but the Latin and Greek have been thrown out of the course of study.

The following will exhibit the cost of maintaining the school for one school year, for which exhibit I am indebted to Hon. Charles Himrod, past clerk of board of directors.

In conclusion of this hastily written report I have the honor to inclose for your inspection specimen examination papers in various branches in the high school, and to cordially and urgently invite your excellency to visit the departments and personally inspect the system and methods pursued and results obtained in the schools under my supervision.

Your obedient servant,

J. W. DANIELS,
Principal Schools.

To His Excellency GEORGE L. SHOUP,
Governor of Idaho.

Hon. C. C. Stevenson, Territorial superintendent, gives a very complete notice of this district in his annual report. The foregoing report, however, contains valuable information not contained in the superintendent's.

FINANCIAL STATEMENT, SEPTEMBER 1, 1888, TO SEPTEMBER 1, 1889.

Receipts.

Cash on hand September 1, 1888.....	\$441. 28
Cash from county taxes.....	3, 770. 27
Cash from district taxes.....	9, 954. 93
Cash from tuition and other sources.....	214. 75
Cash advanced by treasurer.....	1, 133. 39
Total.....	15, 514. 62

Expenditures.

Teachers' and janitor's salaries.....	\$9,035.50
Repairs and furniture.....	244.77
Apparatus.....	75.00
Contingent expenses.....	1,009.35
Redemption of bonds.....	2,500.00
Interest on outstanding bonds.....	2,650.00
Total.....	15,514.62

Course of study—high school.

Term.	Junior.	Middle B.	Middle A.	Senior.
Fall.....	Arithmetic, English analysis, book-keeping, physiology, Latin reader.	Algebra, natural philosophy, rhetoric, book-keeping.	Geometry, English literature, civil government.	Trigonometry, geology, natural history, chemistry.
Winter ..	do.....	do.....	Geometry, general history, natural philosophy.	Trigonometry, geology, political economy, chemistry.
Spring...	Algebra, book-keeping, rhetoric.	Geometry, English literature, civil government.	do.....	Trigonometry, astronomy, botany, graduation part.

Rhetoricals, drawing, music, calisthenics, writing, by all.

LABOR.

There are but few new features to report on this subject, the supply keeping nearly even pace with demand. Laborers of all classes find ready employment in the mines, logging and wood camps, teaming, farming, and other industries.

The average miner is paid \$3 to \$3.50 per day; the more skillful miners are paid \$4 to \$5 per day; mill and smelting hands are paid \$3 to \$4 per day; loggers, wood-choppers, and saw-mill hands are paid \$2 to \$3.50 per day; mechanics and skilled labor, \$4 to \$6 per day; teamsters, \$40 to \$60 per month and board; laborers, \$30 to \$50 per month and board; farm hands, \$30 to \$45 per month and board; teachers, \$40 to \$100 per month; clerks and book-keepers, \$50 to \$150 per month. There is a scarcity of female servants, who would get ready employment at \$20 to \$30 per month.

The mining population is nearly evenly divided between Americans and men of foreign birth. The majority of foreigners are natives of Wales, Ireland, England, France, Norway, Sweden, and Germany. The majority of farm hands are of American birth, all of the States being represented, with a large percentage from the Middle and Western States. In some sections there is a considerable number of Germans, Swedes, and Norwegians, with a very few from other foreign nations, employed. Idaho has as intelligent a class of laborers as are found in any part of the United States. There has been no collision between capital and labor reported during the past year. The Chinese are rapidly leaving the Territory, being seldom employed, except as cooks and laundrymen. The majority of those remaining in the Territory, work low-grade placer mines purchased from white men.

Our farmers are intelligent and prosperous, the majority being Americans. Their homes are surrounded with greater comforts than usually found in new countries. They are industrious, happy, and contented. What is said of the farmer, may be said of all other classes of citizens of the Territory. Intelligence, good morals, and good society are notable as the principal features of the people of Idaho.

INDIANS AND INDIAN RESERVATIONS.

I have been of the opinion for many years that the better way to civilize and make the Indians self-sustaining would be by allotting to them their lands in severalty, and require them to occupy and cultivate the lands thus allotted. This, perhaps, would be no easy task at first, but with a patient, competent, and zealous agent substantial advancement would be made each year.

While Indians remain in their lodges, clustered together in camps or villages, little, if any, progress can be made in teaching them to cultivate the soil or to advance them in useful industry. The male Indians in the West inherit the idea that it is a disgrace to perform any kind of manual labor, and therefore compel the squaws to perform all the drudgery.

They will continue to adhere to this principle just as long as they are permitted to live in communities or villages. Generally a male Indian is in disgrace if seen engaged in any useful avocation. As long as permitted to live in this way, and fed and clothed by the Government, their time will be wasted in idleness and mischievous roaming over the country, and in gambling, horse-racing, and other amusements peculiar to Indians. There are a few exceptions to this rule, and there would be many more if they were allotted lands and required to cultivate them. It could not be expected that they would cultivate many acres for the first few years, nor would the fruit of their labors at first produce sufficient for self-support. Their tribal relations would gradually wear off, and with the aid and advice of competent and conscientious agents would in time become self-reliant and self-sustaining.

On some of our reservations, through the joint action and good counsel of intelligent missionaries and agents, a fair per cent. of the Indians have been persuaded to live in houses. In nearly all such cases the Indians are benefited and cultivate land to some extent.

I am gratified to be able to report that the allotment of lands under the severalty act is progressing satisfactorily, and with little opposition on the part of the Indians. The Nez Percé Reservation, which is one of the most valuable reservations in Idaho, is in Nez Perces County, and covers an area of nearly 750,000 acres. The soil is not excelled in the United States. All kinds of grains and vegetables mature well with a large yield per acre, and without irrigation. Some of the Indians have good orchards, producing all kinds of fruits. I am informed by the agent of this tribe that they have 6,000 acres in cultivation; that 290 families are engaged in agriculture. I am also indebted to the agent for the following table, which he says is, in part, estimated:

Male Indians.....	700
Female Indians	750
Total	1,450

Wheat raised, 1889.....bushels..	40,000	Potatoes raised, 1889....bushels..	5,000
Oats raised, 1889.....do	6,000	Onions raised, 1889.....do	2,500
Corn raised, 1889.....do	1,000	Cabbage raised, 1889.....do	2,000

STOCK OWNED BY INDIANS.

Horses.....	14,000
Cattle	6,000
Hogs	500
Fowls	2,500

There is a large quantity of hay, beans, peas, turnips, squash, melons, etc., raised by these Indians not reported. They also raise mules and sheep.

I am informed that the school on this reservation is not in a flourishing condition.

LEMHI RESERVATION.

The Indians occupying this reservation are a mixed band, composed of Bannocks, Shoshones, and Sheepeaters. Their reservation is on the Lemhi River, in Lemhi County. It has an estimated area of 120,000 acres, most of which is mountainous and rolling hills. This is about as poor a selection as could be made for an Indian reservation. I speak from personal examination, when I say that I do not believe there is sufficient agricultural land on this reservation to give to each Indian 5 acres. Some years ago a delegation of these Indians, with a like number from the Fort Hall Reservation, visited Washington, when they signed with the honorable Secretary of the Interior an agreement whereby the Fort Hall Indians conceded, and the Lemhies agreed to accept, homes in severalty on the Fort Hall Reservation, with an annuity of \$4,000 per year for twenty years. For this consideration the Lemhi Indians were to cede their right to the Lemhi Reservation to the Government.

In February last Congress passed a bill ratifying said agreement, adding an additional section thereto, whereby the Lemhi Indians were privileged to vote on the question of the removal to Fort Hall Reservation. About the first of May last the question of removal was submitted to them by a special inspector. In reply to my inquiry as to the result of this vote, Hon. J. M. Needham, agent, informs me: "The Indians voted unanimously in favor of not going to Fort Hall."

I believe this is a mistake on the part of these Indians. On the Fort Hall Reservation they would have good homes, with full allotments of good agricultural lands. I, therefore, most respectfully recommend that the question of the removal of these Indians be renewed, and they be urged to select homes on the Fort Hall or some equally good reservation. There is not sufficient agricultural land on their present reservation to subsist one-fifth of them; and surely it is not the policy of the Department to keep them for all time in idleness and in a condition that will necessitate their support by the Government.

I am indebted to the agent for the following table of statistics:

Male Indians.....	524
Female Indians.....	265
Total.....	789
Wheat raised.....	bushels.. 100
Oats raised.....	do.... 3,400
Potatoes raised.....	do.... 800
Cabbage raised.....	do.... 200
All other kinds of vegetables.....	do.... 1,000
Hay raised.....	tons.. 75
Horses.....	3,000
Mules.....	3
Cattle.....	75
Fowls.....	20
Acres of land in cultivation.....	300
Indians engaged in cultivating land.....	49
Families living in houses.....	13

The Indian school was closed June 30, 1889.

FORT HALL INDIAN RESERVATION.

This reservation is one of the largest as well as one of the best in the Territory. Its location is in Bingham County, and is occupied by Bannocks and Shoshone Indians.

It has an area of nearly 1,200,000 acres, nearly one-half of which is excellent farming land, with an abundance of grazing land in addition on the low rolling hills. By the provisions of the bill referred to in this report, under head of "Lemhi Indians," these Indians ceded to the Government between 300,000 and 350,000 acres of this reservation; also 1,800 acres in the town site of Pocatello. The land released for the town site has been surveyed into over 11,000 lots, which have been carefully platted. These lots will soon be appraised, and residents who occupied lots at the time of passage of the bill, and have continued to occupy them, have the privilege of taking them at the appraised valuation.

Provision is made for sale of all the lots, except that no lot shall sell for less than \$10. The net proceeds of this sale will be paid to the Indians, thereby giving them a handsome reward.

I recommend that these Indians be required to take homes in severalty. I am confident that the Indians will be benefited thereby, as they will then be placed in the line of progress and civilization; they will each have property and a home to which they will in time point with pride, and as an evidence that they have a claim to citizenship.

There will be a large tract of fine land left vacant after each Indian has received a home. Justice to the Indians, as well as to the thousands of American citizens who are seeking homes, demands this action as early as possible.

I am indebted to U. S. Indian Agent P. Gallagher for the following information :

Male Indians.....	785
Female Indians	808
Total	1,593
Wheat raised by Indians.....	bushels.. 4,500
Oats raised by Indians.....	do.... 4,250
Corn raised by Indians.....	do.... 125
Barley raised by Indians.....	do.... 100
Potatoes raised by Indians.....	do.... 1,490
Other vegetables raised by Indians	do.... 500
Melons	number.. 5,000
Hay	tons.. 1,800
Horses owned by Indians.....	6,140
Mules owned by Indians	2
Cattle owned by Indians	1,000
Hogs owned by Indians	50
Fowls owned by Indians.....	400
Acres of land in cultivation	1,100
Indians engaged in cultivating land	320
Indian families living in houses.....	63

Want of water and continued drought will account for the falling off in agricultural products. Had not this been the case there would have been an increase this year corresponding to that of last year.

The school is in a most flourishing and satisfactory condition.

CŒUR D'ALENE INDIAN RESERVATION.

This reservation belongs to and is occupied by the Cœur d'Alene Indians. I have no official data as to the area of this reservation. It is

estimated at about 600,000 acres. I am informed, unofficially, that the commission appointed to negotiate with these Indians have been successful in treating with them for a tract of their reservation, embracing over 300,000 acres. I sincerely hope this agreement will be confirmed, as it will be the means of disposing of dangerous disputes that have arisen between the Indians and miners in relation to valuable mining properties, and which at one time looked serious.

These Indians are partly civilized, as their agent informs me officially. They all live in houses, but are opposed to taking land in severalty. They cultivate 7,000 acres, from which they have raised this season—

Wheat	bushels..	15,000
Oats	do.....	60,000
Corn	do.....	100
Barley	do.....	3,000
Potatoes	do.....	1,000
Onions	do.....	200
Beans	do.....	50
Other grains and vegetables	do.....	10,000
Hay	tons..	1,000

STOCK OWNED BY THE INDIANS.

Horses	1,000
Mules	10
Cattle	300
Hogs	400
Fowls	600
Male Indians	208
Female Indians	215
Total	423

This reservation is in Kootenai County, in the northern part of the Territory.

The Indian school at Desmet Mission is in a flourishing condition. Average number of pupils, 125.

KOOTENAI INDIANS.

These Indians inhabit a district of country on and adjacent to the Kootenai River, in Kootenai County, and near our boundary line with the British possessions. Major Ronan, of the Flathead Indian Agency, Mont., has been detailed to select boundaries for a reservation for these Indians, who prefer to remain where they are, rather than to be removed to a new field. I have but little data as to their habits or advancement in the line of civilization. I am informed that their time is given principally to hunting and fishing. Their total number, males and females, is 218.

DUCK VALLEY RESERVATION.

This reservation is reported to be occupied by Shoshone and fractions of other tribes. As reports from this reservation are given to the governor of Nevada, I can furnish but little data. About one-half of the area, estimated at 140,000 acres, is in Idaho.

It is with great satisfaction that I am able to report that there have been no Indian outbreaks in the Territory since last report. Complaint is made from many parts of the Territory that the Indians are causing

the settlers great annoyance by camping near residences, their horses at the same time breaking into inclosures. I would recommend that agents be instructed to keep the Indians on their several reservations as closely as possible. You were some time ago advised of the murder of two Indian women on Lost River. The husband of one of the murdered women is a white man named Lee, who was charged with the crime. I offered a reward of \$1,000 for his arrest and conviction. Lee was subsequently apprehended in California, and returned to this Territory from the State of Nevada.

He has been tried in the county of Alturas and found guilty of murder in the second degree, and is now in the United States penitentiary at Boisé City.

This is the only case of crime and bloodshed between the whites and Indians I have at present to report.

The general condition of the Indians in the Territory may be said to be good, and when they have all received their lands in severalty, I believe they will be contented, and their advancement in the line of civilization more rapid.

UNITED STATES PENITENTIARY.

This penitentiary is located two miles east of Boisé City, on a tract of land owned by the United states, and is under the charge of the United States marshal.

This penitentiary in its present condition is inadequate to accommodate or keep with safety the large number of convicts now incarcerated within its walls, and reflects discredit to a great and humane government.

Governor Stevenson in his report last year forcibly presented the necessity of enlargement, wherein he said:

In each cell two prisoners are now confined, where the capacity is only suited and intended for one.

The prisoners are clothed and fed, and crowded into these cells without any employment, and only kept there by the guns of the guards.

The wall now surrounding the penitentiary is constructed of frail inch boards.

In the sundry civil appropriation act, approved October 2, 1888, an appropriation of \$25,000 was made for the improvement and enlargement of this penitentiary. May I ask if this appropriation can not be reached and become available in the construction of a new building without serious delay?

If it is not in conflict with the act of February 23, 1887, I respectfully request that the United States marshal be authorized to employ the prisoners in taking out stone from the quarry near by, for the purpose of surrounding the penitentiary with a good and substantial stone wall. This, I think, would not be construed as hiring out the convicts. There are several good stone masons among these prisoners.

I can not present too strongly the importance of hastening these much needed improvements. They are required for the safe-keeping of the desperadoes and murderers there confined, that they may not be permitted to escape to commit new depredations.

On their part they have a right to expect humane treatment, which is out of the question in their present crowded condition.

I append the report of the warden in charge.

UNITED STATES PENITENTIARY,
Near Boise City, Idaho, October 7, 1889.

SIR: In compliance with your request, I have the honor to submit the following report in regard to the United States penitentiary, in which is confined the Territorial prisoners of Idaho.

The prison inclosure is about 450 feet long by 225 feet wide, and is surrounded by a board fence built a number of years ago out of one-inch lumber, which has been repaired from time to time as necessity required to keep it from falling down. It is about 12 feet high, very frail, and could be easily scaled; and the prisoners are only kept within the confines of the same by the vigilance of the armed guards, who are posted in sentry houses on said fence during the day.

The cell-house is built of stone taken from a quarry on the prison grounds, and has, in all, 27 windows, of which only two are wholly ironed; 11 are only ironed on the lower portion, while the remaining 14 have no irons at all. The larger portion of the 27 windows are easily accessible from the cells and walks leading to the same, and afford an avenue of escape from the cell-house.

The block is built of brick of an inferior quality and is very poorly constructed; it contains 42 cells 6 by 8 feet, which are very poorly ventilated, and in the larger portion of which I am at the present time compelled to confine two prisoners, which not only adds insecurity to their safe keeping, but is injurious to their health, as the capacity is only suited and intended for one.

There is no employment for the prisoners; hence they are locked in their cells, with the exception of about four hours each day, when they are turned out in the yard for exercise, being closely watched by the armed guards.

There are confined in the prison at the present time 66 Territorial prisoners and 3 United States prisoners, as per the inclosed report, showing the number and nativity of each, and the sentence of those for life; also, those for ten years and over.

The sanitary condition of the prison is very poor; there is no sewerage; the waste water from the kitchen and wash-house is conveyed in wooden boxes just outside of the yard, and allowed to spread over the ground. Portions of it are absorbed in the sandy soil while some of it remains and sends forth offensive odors, especially in warm weather, while the privy used by the prisoners during the day, and in which is thrown the slops from the cell-house, has to be moved from place to place in the yard as necessity requires.

There is a scarcity of water at the prison. That which is used for drinking and culinary purposes is procured from a spring about one-fourth of a mile above the prison, on the hill, and conveyed to the same in wooden and iron pipes. The spring is very small, and should the number of prisoners increase to 80 or 100, the supply of water for the above purposes would be entirely inadequate.

On the prison grounds, and but a short distance from the prison, is a splendid stone quarry from which could be procured at a very little expense all the stone necessary for building additional prison room, besides building a good, strong, and substantial wall around the prison, and thus add security to the safe-keeping of the prisoners, as their chances of escape would, with such a wall, be greatly reduced. By a small addition to the force of guards now employed, the prisoners could be put at work quarrying and dressing the stone necessary for building purposes, besides other work necessary for the improvements mentioned, and thus not only reduce the expense of the improvements, but be beneficial to their health, and far more humane than keeping them locked up two in a cell, 6 by 8 feet, eighteen to twenty hours per day.

And now in conclusion, I wish to say that some of the improvements are actually necessary, and should be attended to at an early day, as they are required for the wants, safe-keeping, and health of the prison.

Very respectfully,

J. D. SPRINGER,
Warden United States Prison.

Hon. GEO. L. SHOUP,
Governor of Idaho.

List showing nativity of convicts in the United States Penitentiary near Boise City, Idaho, and the sentence of those for life; also those for ten years and over.

Nativity.	No. of Convicts.	Remarks.
<i>Territorial prisoners.</i>		
China.....	3	
Canada.....	4	1 for life and 1 for 25 years.
England.....	6	1 for life, 1 for 25 years, 1 for 15 years, and 2 for 14 years.
Germany.....	5	1 for 10 years.
Ireland.....	5	2 for life and 1 for 10 years.
Scotland.....	1	1 for 10 years.
California.....	1	
Colorado.....	1	
Georgia.....	1	
Idaho (Indians).....	2	2 for 10 years.
Illinois.....	4	1 for 15 years.
Iowa.....	4	1 for life, 1 for 14 years, and 1 for 10 years.
Kansas.....	1	
Missouri.....	1	1 for 25 years.
Maine.....	1	
Montana.....	1	
Massachusetts.....	1	
New Jersey.....	2	1 for 15 and 1 for 10 years.
New York.....	6	
Ohio.....	3	1 for life.
Oregon.....	2	1 for 10 years.
Pennsylvania.....	3	1 for 20 years.
Rhode Island.....	1	1 for 14 years.
Texas.....	2	1 for 20 years and 1 for 10 years.
Tennessee.....	1	
Utah.....	2	1 for 20 years.
Vermont.....	1	
Virginia.....	1	
<i>United States prisoners.</i>	66	
Illinois.....	1	
South Wales.....	1	
Wisconsin.....	1	Awaiting trial and committed in default of bail.
	3	

PUBLIC BUILDINGS.

UNITED STATES ASSAY OFFICE.

This fine structure is located in the heart of Boise City, the capital of the Territory. It is the property of the United States, and cost the Government \$81,000. It is greatly appreciated by those who are engaged in handling the products of our mines, as the Government pays transportation charges on bullion purchased at the office.

By reference to the following table it will be seen that the volume of business transacted has greatly increased.

Gold and silver bars manufactured at United States Assay Office, Boise City, Idaho, commencing with fiscal year of 1884.

1884.....	\$150,615.00
1885.....	183,960.50
1886.....	122,046.61
1887.....	446,641.66
1888.....	919,942.65

I append hereto a communication from Hon. J. W. Cunningham, Assayer in Charge.

UNITED STATES ASSAY OFFICE,
Boise City, Idaho, September 28, 1889.

SIR: The work of gathering statistics under the direction of the Mint Bureau will not be begun until after the close of the year. No data is in possession of this office, therefore, upon which to base an accurate estimate of the production of precious metals for the current year.

Owing to the unprecedented scarcity of water it is evident that the production of the placer mines will be less this year than has ever been known since the settlement of the Territory. However, the quartz mines of Owyhee, Boise, and the northern counties are far exceeding their out-put for last year and will doubtless swell the total production of the Territory to nearly twice that of 1888.

The encouragement offered by the Government in paying the transportation charges on gold bullion purchased at this office, the miner thus realizing the mint value, is appreciated, as evidenced by the fact that the annual business of this institution now approximates \$1,000,000, as against a little more than \$100,000 a few years ago.

Very respectfully,

J. W. CUNNINGHAM,
Assayer in Charge.

His Excellency GEO. L. SHOUP,
Governor.

BOISÉ BARRACKS.

I am indebted to Lieut. Frank B. Andrus, post-adjutant, for the following data:

This post was established in July, 1863. Geographically it is in latitude 43° 37', and longitude, 116°; altitude, 2,812 feet. Located in Boise Valley, about one-half mile from Boise City.

The climate is mild; mercury seldom higher than 100° Fah. in summer, or below zero in winter. Suspension of drills, etc., on account of cold weather is practically unknown.

The post buildings are constructed for a garrison of two companies—one of infantry and one of cavalry. Quarters are for but six officers.

It is at present the only occupied military post between Fort Douglas on the south and Fort Walla Walla on the north, and between Fort Washakie on the east and the Pacific Ocean on the west.

	Miles.
Fort Douglas, Utah, to Fort Walla Walla, Wash.....	743
Washakie, Wyo., to Boise Barracks.....	782
Boise Barracks to Fort Walla Walla, Wash.....	321
Boise Barracks to Fort Sherman, Idaho.....	539
Boise Barracks to Fort Portland, Oregon.....	505
Boise Barracks to San Francisco, Cal.....	1,251
Boise Barracks to Fort Camp Pilot Butte, Wyo.....	525

In view of this point being the Territorial capital, and for twenty years to be the State capital; the construction of railroads present and prospective; the extension of the Idaho Central, Chicago and Northwestern, and Oregon Pacific; the abundance and cheapness of supplies in the immediate vicinity; the amount of lumber and brick manufactured in the vicinity; the advantage of excellent company gardens; the room available; the size, population, wealth, resources, etc., of the Territory, it would seem that this post should be enlarged to accommodate the headquarters of a regiment and at least four companies. It is estimated that the cost of such enlargement would be about \$100,000.

The abundance and cheapness of supplies at this place, and the increasing railway facilities for moving in any direction, etc., point to this place as suitable for a permanent post.

FORT SHERMAN OR FORT CŒUR D'ALENE.

This fort is located on the northern extremity of Cœur d'Alene Lake, in Kootenai County, and near the line of Washington Territory. It is a five-company post. The location of this post being so near the border, its influence is but little felt in this Territory. Its importance, however, is felt and appreciated by the people of Washington Territory and by those of our own in the extreme northwestern counties.

In view of the fact that this post is so distant from the central part of the Territory, I again urge the importance of increasing the barracks at Boisé City to a four or five company post.

CAPITOL BUILDING AT BOISÉ CITY.

The Territory has constructed, unaided by Congress, a capitol building, at a cost, including furniture, of about \$85,000.

The ground was furnished by the city corporation, but is now being improved by the Territory at an expense of \$15,000.

The capitol is a most substantial building, the basement being solid masonry, while the main structure is of the best quality of brick, and is heated by latest improved heating apparatus. The capitol contains a spacious suite of rooms for the governor; another for the surveyor-general; two rooms for the Territorial secretary, and single rooms for the superintendent of public instruction, the controller, the United States attorney, and for an armory. These are all upon the first floor. On the same floor is the magnificent library room, with a collection of books, believed the largest and best owned by any Territory of the United States. On the second floor are the council chamber, representatives' hall, the supreme court room, the judges' chambers, and various committee rooms. The third floor is connected with the galleries, and also has book rooms and committee rooms. Every part of the capitol building is elegantly finished and furnished.

INSANE ASYLUM.

The Territory has at Blackfoot, Bingham County, an asylum for the insane. This is a large three-story building. There are seventy-two acres of land in connection with the asylum, a portion of which is under cultivation. The building and grounds have cost the Territory approximately about \$40,000. The institution is under the immediate control of Dr. John W. Givens, who is the medical superintendent, under the direction of the board of trustees, consisting of Messrs. I. N. Costin, O. P. Johnson, and N. A. Just. Dr. Givens is peculiarly adapted to have charge of this important institution, and is entitled to great credit. I submit herewith his report:

The movements of the asylum population for the year have been as follows:

Number of patients in the asylum at the beginning of the year, viz, on July 1, 1888: 35 males, 11 females; total 46. Number of patients admitted during the year: 20 males, 10 females; total 30. Whole number of patients under treatment during the year: 55 males, 21 females; total 76. Daily average number of patients in the asylum for year: $53\frac{2}{3}$. Number of patients discharged: 8 males, 3 females; total 11. Number of patients died: 3 males; total 3. Number of patients remaining in the asylum at the end of the year, viz, June 30, 1889: 44 males, 18 females; total 62. Of the 11 patients discharged, 7 males and 1 female were well; 2 males were improved, and 1 male was unimproved. Of those discharged as well, all but 1 had been here less than one year. One had been here twenty months. The general health of the patients has been good. The death rate, 4 per cent., is the lowest since the opening of the asylum.

There have been no serious accidents to life or limb during the year, and no successful elopements.

The more competent patients have been more or less constantly employed in farm and garden and housework; the plowing, seeding, hoeing, cultivating and harvesting; the ditch-making and irrigating, together with making the patients' clothing; the cooking, washing and ironing; the general household duties of keeping the wards in order; the care of the sick, aged and helpless, continuing to provide an increasing amount and variety of employment for them.

The following tables will show further data in regard to the patients:

A.—Counties from which patients were received.

	Males.	Females.	Total.
Ada	1	1	2
Alturas	4	2	6
Bear Lake .....	.....	1	1
Bingham	3	3	6
Boise	3	.....	3
Custer	2	.....	2
Idaho	1	.....	1
Kootenai .....	.....	1	1
Latah	1	2	3
Shoshone	3	.....	3
Washington	2	.....	2

B.—Nativity of patients admitted.

Canada	2	.....	.....
England .....	.....	1	.....
Germany	1	.....	.....
Idaho	1	.....	.....
Illinois	2	.....	.....
Indiana	1	.....	.....
Iowa	1	.....	.....
Kentucky	1	.....	.....
Missouri	2	1	.....
New York .....	.....	1	.....
Norway .....	.....	2	.....
Ohio	3	.....	.....
Pennsylvania	1	.....	.....
Scotland	2	.....	.....
Utah .....	.....	2	.....
Unknown	1	2	.....
Washington Territory	1	.....	.....
Wisconsin	1	1	.....

C.—Ages of patients admitted.

Between the ages of—			
15 and 20	1	.....	1
20 and 25	2	.....	2
25 and 30	3	1	4
30 and 35	2	3	5
35 and 40	1	.....	1
40 and 45	3	4	7
45 and 50	3	1	4
50 and 55	1	.....	1
55 and 60	1	.....	1
60 and 65	1	.....	1

D.—Occupation of patients admitted.

Clerk	1	.....	1
Farmers	5	.....	5
Farmers' housewives .....	.....	2	2
Housewives .....	.....	6	6
Miller	1	.....	1
Miners	5	.....	5
Miner's housewife .....	.....	1	1
Laborers	2	.....	2

D.—Occupation of patients admitted—Continued.

	Males.	Females.	Total.
Prostitute .....	.....	1	1
Plasterer	1	.....	1
Rancher	1	.....	1
Section hand	1	.....	1
Sheep herders	2	.....	2
Stock herder	1	.....	1

E.—Civil condition of patients admitted.

Single	13	.....	13
Married	5	9	14
Widower	1	.....	1
Widow .....	.....	1	1
Divorced	1	.....	1

F.—Forms of insanity with which the patients admitted were affected.

Mania:			
Acute	8	2	10
Chronic	3	2	5
Epileptic .....	.....	3	3
Melancholia:			
Acute	3	2	5
Chronic	2	1	3
Dementia	1	.....	1
Dementia, chronic	1	.....	1
Paresis	1	.....	1
Delusional insanity	1	.....	1

G.—Probable causes of insanity of the patients admitted.

Alcoholism	2	.....	2
Alcoholism and cerebral concussion	1	.....	1
Dissipation .....	.....	1	1
Epilepsy .....	.....	3	3
General ill health	4	3	7
Hereditary	4	1	5
Injury to head	1	.....	1
Morphine habit	1	.....	1
Unknown	5	2	7
Worry	2	.....	2

H.—Causes of death.

Epilepsy	2	.....	2
Marasmus	1	.....	1

I.—At whose expense the patients have been cared for.

Expenses paid by—			
Territory of Idaho	54	21	75
Guardian	1	.....	7

FINANCIAL.

The bills contracted during the year have been as follows:

Provisions	\$4,897.30
Male clothing	626.44
Female clothing	237.35
Fuel	1,339.55
Household furnishing supplies	2,045.98
Furniture	657.98
Farm	949.97
Repairs	214.21
Improvements	700.41
Dispensary	41.08
Pay-roll	6,970.84
Directors' expenses	640.90
Total	19,322.01

Owing to the award of contracts for the six months' supplies ending December 1, 1889, being let one month earlier this year than usual, the above includes a number of the bills for supplies for the ensuing six months, and all the bills for the year just ended.

Twenty-eight dollars have been received for the care and treatment of non-indigent insane for the past year. This is the smallest sum received from this source during any year since the opening of the asylum. The daily average per capita cost of care and treatment has been 81+ cents.

FARM AND GARDEN.

The following are the products of the farm and garden:

Articles.	Quantity.	Articles.	Quantity.
Beef	600	Milk	3,650
Beets	1,660	Muskmelons	10
Cabbage	5,440	Pork	3,911
Calves	3	Pumpkins	3,000
Carrots	3,100	Peas	1,250
Corn fodder	3,000	Potatoes	28,800
Cucumbers	75	Rutabagas	680
Green beans	500	Squash	3,000
Green corn	215	Tomatoes	1,140
Hay	42,000	Turnips	740

IMPROVEMENTS.

The principal improvement made during the year has been an irrigating ditch.

The Blackfoot River, from which we have obtained water for irrigation until this year, was so low last year that the entire country supplied by it was short of water. It became evident that much of the country which had been settled with the expectation that water could be obtained from Blackfoot River could not be irrigated from this stream, and there was a movement made by the farmers in the vicinity of the asylum to make a ditch from the Snake River to carry water to the farms in our neighborhood. The asylum joined in this movement and made one-seventh of a ditch 7 miles long, 8 feet wide on the bottom, 12 feet wide on the top, and 3 feet deep, on a grade of 2 feet fall to the mile.

This ditch is supplying the asylum with all the water it needs at present, with only the cost of ordinary repairs and attention.

It is most fortunate that we have secured water from the Snake River, as the Blackfoot has already completely failed to supply the farms in our vicinity with water.

The walls of the bedrooms have been ceiled with matched lumber to cover up broken places in the lath and plaster.

The last legislature made an appropriation of \$15,000 to enlarge and otherwise improve the asylum building, to build a barn and outhouses, and lay a sewer pipe from the building.

The materials for these improvements have been ordered, and the work of making the improvements will soon be under way. It is the intention to make the improvements and addition as good as can be made, and when completed there will be com-

fortable accommodation here and good facilities for the treatment of about one hundred patients.

ACKNOWLEDGMENTS.

The Rev. Messrs. Stull and Lyons have kindly held services with us at different times.

Governor Stevenson, during his term of office, gave frequent evidence by visit and advice of his wise and friendly interest in the welfare of the asylum.

Governor Shoup has also visited us, and by his helpful counsel aided the institution in the service which it was designed to give to the people.

Respectfully submitted.

JNO. W. GIVENS,
Medical Superintendent.

OFFICERS AND EMPLOYÉS OF THE ASYLUM.

Hon. I. N. Coston, O. P. Johnson, esq., N. A. Just, esq., directors.

Compensation.—Five dollars per day for each day actually employed, and reimbursement for necessary expenditures.

Name.	Position.	Salary.
John W. Givens, M. D.	Medical superintendent.....	\$2, 500
George E. Bumgarner	Steward	800
Lida M. McPherson	Matron	600
Margaret C. Reevy	Book-keeper	600
Oscar A. Jarrett.....	Head attendant.....	510
E. Bryce York.....	Farmer	510
J. P. York	Attendant	480
Mary E. Jensen.....	Cook.....	450
Mary Hansen.....	Assistant cook.....	360
Harvey E. Fisher	Night attendant	420
Rie Lorentzen	Laundress	360
M. J. Rowell	Dining-room attendant.....	300

LEGISLATIVE.

Congress appropriates only \$2,600 for each of the governors of the Territories, and \$1,800 for each secretary, in full compensation for their services. Section 1845, Revised Statutes of the United States, provides—

The annual salaries of the governors of the several Territories shall be \$3,500, and the salary of the secretaries shall be \$2,500 each.

The salaries of the governors and secretaries are not sufficient, “as reduced by Congress,” to defray the actual expenses of the governors, and require the closest economy on the part of the secretaries.

My predecessor, in his last report, protested against the provisions of the act of Congress, March 3, 1885. This act compels our Territorial courts to take cognizance and jurisdiction of all offenses committed by Indians against the property of another Indian, or other persons, and of the following crimes, namely: Murder, manslaughter, rape, assault with intent to kill, arson, burglary, and larceny committed on the Indian reservations. We have now in the penitentiary two Indians sentenced for long terms, for which we are paying the United States \$1.50 per day, besides all the expenses of their trials and convictions. Others have also been sentenced who have served out their terms and been discharged.

I cannot comprehend why the General Government should compel the Territory to pay for the support of a criminal class who are the wards of the Government, from whom the Territory derives no revenue or support.

This law would be all right if these criminals were tried in the United States side of our courts and sentenced to the penitentiary as United States prisoners, and all the expenses paid, as in other offenses against the laws of the United States, thereby relieving the Territory of this unjust and oppressive burden. We are liable at any time to have a large number of Indians arrested, tried, and convicted, and sentenced to the United States penitentiary, with the order that the Territory must pay all expenses. I hope that this unjust and unreasonable law will be amended.

The vast forests of fine timber in the Territory should be protected by different rules and regulations than those now in force.

Commissioners should be appointed with districts assigned them, in which they should reside during the months of July, August, and September, and required to be continually on the watch for fires and, when necessary, employ men to subdue them.

The expense would be small when compared with the millions of feet of timber destroyed annually by fires. Many of the fires start through the carelessness of hunters, travelers, and prospectors. These parties would be more careful about extinguishing their camp-fires if they knew that a Government agent was near by. And should a fire start, with some one in the district whose duty it was to look after it at once, it would be subdued before doing much damage. These agents or commissioners should have power to make arrests, and severe punishment should be inflicted on all offenders.

The question of Statehood is one that deeply interests the people of Idaho. They will look forward with great interest to see what action will be taken by Congress, looking to our admission.

There should be no hesitation on the part of Congress, as Idaho possesses all the elements necessary to a great and prosperous State. Your favorable recommendation would be of great value and greatly appreciated by the people of Idaho.

The question of irrigation is of great importance, not only to Idaho, but to the entire dry area of the great West. Your recommendation to Congress, calling attention to the importance of this question, would be of value to the Senate Committee on Irrigation in bringing this question up for early consideration. It is to be hoped that Congress will provide means for constructing reservoirs where needed, and for building high line canals to cover all arid lands within reach of large streams.

The Senate committee will undoubtedly present their views in an able report, accompanied by a bill covering this whole question. It should be taken up and acted upon without delay.

Each Territory should be protected in the right to all waters within their respective boundaries. And no filings or locations made by foreign companies or corporations, under any name or style whatever, should be recognized or permitted to interfere with our water. The surplus, "after all home requirements are satisfied," when it reaches our boundaries, is theirs without question.

TERRITORIAL WAGON-ROAD.

* * * Whereas a wagon-road between Mount Idaho, in Idaho County, and Little Salmon Meadows, in Washington County, would open up many new mining camps and extensive agricultural districts upon and adjacent to the line thereof, would constitute a grand Territorial highway by facilitating travel between North Idaho and South Idaho, and more closely connecting all the counties of the Territory would furnish the ready passage of troops and easy transportation of military supplies, in case of Indian wars, to those outlying sections most exposed to the inroads

of savage tribes, and would be of almost incalculable benefit to the entire Territory of Idaho; and

Whereas not only the counties through which said proposed road would pass, but the whole Territory, would be benefited by the building thereof, while the great expense attending its construction would preclude the counties upon the line thereof from building the same from their own resources; and

Whereas, under the laws of the United States, legislation such as is herein proposed must be ratified and approved by the Congress of the United States; and

Whereas this legislative assembly desires to construct the said proposed road at the expense of the Territory of Idaho: Therefore,

Be it enacted by the legislative assembly of the Territory of Idaho, as follows:

* * * * *

The foregoing preamble and bill were passed at the fifteenth session of the Idaho legislature. Fifty thousand dollars were appropriated for the construction of said road. As Congress has prohibited the Territorial legislature from passing special laws—a wise provision in most cases—still there will often arise cases like the one above referred to, where it is almost of vital importance that the Territorial legislature should be allowed to appropriate money out of the Territorial treasury for public improvements.

I would earnestly recommend the passage of the bill giving the necessary authority to the legislative assembly.

IRRIGATION.

The application of water to the arid lands of the Territory has demonstrated beyond question the great productiveness of the soil. Millions of acres of land in Idaho, plains and plateaus, once classified as a great desert, have been proven to be as fine agricultural land, when irrigated, as found in any part of the United States.

The great problem has been and is now: How can water be conveyed to lands lying high above, and in many localities far distant from, streams from whence the water must be brought to irrigate? Another grave question is: How can the water that goes to waste for more than one-half the year be garnered to be used during the season of irrigation? These are questions that should be considered, not for the present requirements only, but looking to the welfare of the generations to follow.

The vitality of agriculture and the peace and prosperity of those engaged in cultivating the soil are deeply concerned in the solution of this great question, which has to-day a greater significance to the settlement of our lands and populating the Territories than any other.

Prompt and decisive action should be taken looking to the control and application of water under some well formulated system. Each year's delay renders any general system more difficult, for the reason that hundreds of additional water-rights have been filed. To reconcile all those claiming priority of right is a question also to be considered in the adoption of a general system.

I do not feel justified in giving my views as to the best method of handling this great and important question pending the report of the Senate Committee on Irrigation.

Inasmuch as the act of Congress, at its last session, in making a liberal appropriation for the survey of the arid regions, with a view to the supply of water for irrigation, was so expressed as to give prominence to reservoirs and but slight reference to surveys for canals and ditches, it was feared the Geological Bureau might so construe the act as omitting canal surveys altogether. To counteract such a construction, if found necessary, and to get the work of surveying begun in Idaho as early as possible, were subjects of especial concern, and re-

ceived immediate attention through a timely report made in February last to the Department, by the surveyor-general, presenting some of the features of portions of Idaho which are similar to those of any other State or Territory. Thus was official attention directed to Idaho, and an early commencement of irrigation surveys here satisfactorily obtained.

The action of the Senate in appointing an able and efficient committee of its members to visit, personally inspect, and report on the whole subject of the reclamation of our arid region will give us strength in the halls of Congress and educate the whole country to the fact that our arid region has arable land enough for a kingdom, and our dry, basaltic soil is the best in the world. Water is about all the fertilizer it will ever need.

In accordance with request made by Senator Stewart, chairman of the Senate Committee on Irrigation, to Surveyor-General Straughan, and a similar request of Maj. R. J. Hinton, irrigation engineer of the Geological Survey Bureau, to me, requesting that facts and information be obtained as to irrigation and arid lands in Idaho for presentation to the Senate committee, circulars were issued by myself and the surveyor-general, early in June last, to representative citizens in each county, to twenty-six deputy mineral surveyors, and the respective county surveyors in the Territory, requesting reports giving the area and location of arid lands, volume of water, ditches, etc., accompanied by maps. Here they were, by Surveyor-General Straughan, formulated into one system. Maps were made of each county having irrigable lands. An exhibit sheet, showing all facts obtained as to each county, was prepared, and the whole presented to the Senate committee at its session held in Boise City, August 17 last.

From the vast amount of information thus obtained from all parts of Idaho, and from other sources, Surveyor-General Straughan has very carefully prepared a complete report, by counties, which is included with that of myself in this report, and to which I refer you for detailed information on this subject.

In this connection I desire to express the thanks of both Surveyor-General Straughan and myself to the gentlemen in all parts of our Territory, who have so fully and so kindly furnished the information and data necessary to the preparation of the report upon irrigation and arid lands. The thanks of myself and the people of Idaho are especially due to Surveyor-General Straughan for the time, laborious work, patient and careful attention given to the collection of authentic data and preparation of reports and maps, and for which, I am pleased to say, he was highly complimented by the honorable gentlemen comprising the Senate Committee on Irrigation.

OFFICE OF U. S. SURVEYOR-GENERAL,
DISTRICT OF IDAHO,
Boise City, October 8, 1889.

SIR: In compliance with your request I have the honor to submit herewith a report upon irrigation and arid lands in Idaho.

The matter is one of gravest importance to this Territory. Irrigation to the extent of the normal flow of streams has reached its limit in several counties, while in some it has been overdone notwithstanding the fact that we have 8,791,350 acres of good agricultural land capable of reclamation by water, of which only 740,350 acres are now reclaimed and in process of reclamation, being only 8 per cent. of what might be accomplished. This estimate does not include the large areas of agricultural land in Idaho, Kootenai, Latah, Nez Perce, and Shoshone Counties, which are not arid and do not require artificial irrigation except to a limited extent; nor does it include a considerable area in other portions of the Territory, where the elevation is such as to insure rain-fall sufficient for the growing of crops.

Thus it appears that about 8,051,000 acres of irrigable land—now arid—belong to the Government, and ever will belong as a heritage for sage-brush and jack-rabbits, until storage reservoirs and main canals are constructed.

It therefore remains for Congress to devise the plan and formulate the proceedings by which this water, which is in excessive abundance, shall be brought to these lands and maintained and controlled for the greatest good to the greatest number.

Hundreds of millions of pounds sterling have gone and are still going from England to India, where every available site for a canal is being occupied by an English joint-stock company. They realize from 8 to 25 per cent. on their stock, and each one improves annually as an investment.

The fever caused by this success in India has extended to the United States, but the methods of joint-stock companies do not harmonize with our republican ideas. Local control in the hands of the land owners concerned might be arranged, it would seem, to suit every irrigation basin, leaving nothing more to be desired.

The plan I have adopted for presenting this subject by counties, rather than irrigation districts or water-sheds, is the same as that in my report made to the United States Senate Committee on Irrigation, August 17 last. But that report was accompanied by county maps or diagrams to illustrate, whereas this report, in the form submitted, is best suited to the needs of the people in Idaho who are familiar with all the localities named. The reports also differ in that the one first referred to sought to embrace the largest possible amount of facts for the future use of Government irrigation engineers in the field, whilst this report will present to the Hon. Secretary of the Interior, as well as to our own people, a full conception of the immense possibilities in store for each one of our counties and for Idaho as a whole.

ADA COUNTY.

Area of the county.....	square miles..	2,424
“ irrigated	acres..	60,000
“ irrigable.....	do..	900,000

Canals from Boise River, 9; total length, 140 miles; proposed, 130 miles.

Canals from Payette River, 4; total length, 66 miles; proposed, 120 miles.

For the 250 miles proposed in this county, extensive and elaborate surveys and estimates have been made and their management is placed in the hands of capable, energetic men. As these canals will be of great capacity and occupy a high level the whole of the arable portion of Ada County seems likely to be soon irrigated and settled up with ten or fifteen times its present population.

ALTURAS COUNTY.

Area of county.....	square miles..	2,100
Area, irrigated	acres..	14,500
Area, irrigable.....	do..	268,000

Lost River:	Acres.	Other small creeks:	Acres.
Irrigated.....	5,000	Irrigated.....	1,000
Irrigable	100,000	Irrigable	2,500
Wood River:		Lava bed plains:	
Irrigated.....	7,000	Irrigable	150,000
Irrigable	12,000		
Trail Creek:		Total irrigated	14,500
Irrigated.....	500		
Irrigable	1,000	Total irrigable	268,000
Deer Creek:			
Irrigated.....	1,000		
Irrigable	2,500		

The valleys in this county are not wide, excepting those of Big and Little Lost Rivers and the great plains or Lava Desert, which absorb those rivers even at their flood tide. Except for the reason just mentioned there is an abundant supply usually, until about July 1, after which the supply is deficient, and the only resort must be to reservoir storage. For this purpose a number of sites have been found, and their locations reported to the Bureau of Geological Survey for technical examination. Storage for the needs of Logan County must also be provided here.

The valleys of Lost River and the so-called Lava Desert are said to contain 150,000 acres of good land, now wholly destitute of water, even for stock. The mountain drainage into these rivers embraces certainly 1,000,000 acres, or five times more than enough, if properly stored and utilized. Even in flood times all this water finds subterranean channels, the locations of which are but partially discovered, their geological features only surmised, and their remedy a matter of vague suggestion. As this

soil is very rich and the water superabundant, reservoirs will not be required, when the loss through the "sinks" referred to shall be avoided. This region may become reclaimed sooner and at less expense than the average of other localities.

BEAR LAKE COUNTY.

Total area of county, 1,300 square miles, less area lake-water surface.

Irrigation in this county is now practiced to a greater extent proportional with its size than any other county of Idaho.

A very careful estimate made by the ex-county surveyor, J. C. Rich, civil engineer, who furnishes the statements in report from which the following is tabulated, puts the area now irrigated at 21,500 acres, and an additional 40,000 acres might be reclaimed from the desert by the construction of thirteen reservoirs at a total cost of \$59,500, or \$1.50 per acre on the land reclaimed; number of canals and ditches, 69; total length, 206 miles; cost, \$73,500; irrigated, 21,500 acres.

A project was inaugurated in Utah by a corporation foreign to the laws of this Territory, with a capital reported at \$2,000,000, for diverting the waters of Bear River and Bear Lake, by means of a canal extending into Utah, for use and disposal in that Territory. Filings for this purpose were recorded according to the forms of law upon all the waters of Bear Lake, Bear River, and its numerous tributaries, including the right to raise the surface of Bear Lake several feet to serve as their storage reservoir.

In the counties of Bear Lake, Bingham, and Oneida we have 250,000 acres of good arable land which can rely only upon this source for their water supply; and its diversion, control, or interference by any party foreign in interest to the settlers upon these lands will receive no favors from the authorities in Idaho.

Accordingly the Department of the Interior was duly notified of the proceedings and intentions above mentioned, per your telegram of July 29, 1889, and wired assurances received on August 3 following from the honorable Secretary of the Interior, that the act of Congress approved October 2, 1888, fully and completely protects our interests in Bear River Valley, and has done so ever since the passage of said act under provisions thereof, as follows:

"For the purpose of investigating the extent to which the arid region of the United States can be redeemed by irrigation, and the segregation of the irrigable lands in such arid region, and for the selection of sites for reservoirs and other hydraulic works necessary for the storage and utilization of water for irrigation and the prevention of floods and overflows, and to make the necessary maps, including the pay of employes in field and in office, the cost of all instruments, apparatus, and materials, and all other necessary expenses connected therewith, the work to be performed by the Geological survey, under the direction of the Secretary of the Interior, the sum of one hundred thousand dollars or so much thereof as may be necessary. And the director of the Geological Survey, under the supervision of the Secretary of the Interior, shall make a report to Congress on the first Monday in December of each year, showing in detail how the said money has been expended, the amount used for actual survey and engineer work in the field in locating sites for reservoirs, and an itemized account of the expenditures under this appropriation. And all the lands which may hereafter be designated or selected by such United States surveys for sites for reservoirs, ditches, or canals for irrigation purposes and all the lands made susceptible of irrigation by such reservoirs, ditches, or canals are from this time henceforth hereby reserved from sale as the property of the United States, and shall not be subject after the passage of this act to entry, settlement, or occupation until further provided by law: *Provided*, that the President at any time in his discretion, by proclamation, may open any portion or all of the lands reserved by this provision to settlement under the homestead laws."

Under provisions of the foregoing act the honorable Commissioner of the General Land Office has since directed the local officers to withdraw all lands from entry within 2 miles of the shore line of Bear Lake.

BINGHAM COUNTY.

Total area of county, 12,364 square miles.

This is a large county and embraces an immense scope of valley land along the Snake, Blackfoot, Teton, and Bear Rivers and other minor streams. In this section the facilities for irrigation are so inviting that a large amount has already been accomplished, viz:

Irrigated and in process	acres..	284,750
Irrigable	do...	2,503,500
Length of canals constructed	miles..	617
Cost of canals (present)		\$593,400

Considering that most of this work has been done within the past two or three years and that the progress at this time is more rapid than ever before, it is fair to conclude that within a comparatively short time this remaining two and a half millions of acres will be under cultivation.

It is well that the people of Bingham have from the first paid more attention to agriculture and less to mining. They are demonstrating that even in Idaho, where there is gold in every hill and valley, yet in our sage-brush plains are the best paying mines.

With so great a body of irrigable lands above the American Falls it was feared by those who first began to collect facts and study the features of the country with the view to irrigation that this region above the falls might consume all the water, leaving none, or but little, to be conveyed by canals to the high plains farther down Snake River Valley. Fortunately, however, nature has placed a dam of hard trap-rock across the whole valley from foot-hill to foot-hill, at the American Falls, thus compelling all the waters above it, whether in open streams or filtering through the soil, to collect together again and pass over at the Falls, losing nothing of its normal volume except the loss by evaporation.

The irrigation surveys by the Geological Bureau of the Government are now being vigorously prosecuted, under competent supervision, in Bear Lake and Bingham Counties, which will disclose all the features pertaining to a water supply, and point out what works are needed and the cost of construction.

BOISÉ COUNTY.

Total area of county, 3,024 square miles.

This county embraces the north half of the basin drained by the North Fork of Boise and the entire upper basin of the Payette Rivers, and is generally hilly and mountainous.

The only considerable bodies of farming land are Long Valley, on the North Fork of Payette, and in the Payette Valley, below the junction of the North Fork. The first is estimated at 60 miles in length by 9 miles in width. The latter consists of 4 isolated settlements of from 30 to 50 families each.

Settlement commenced in Long Valley only five years ago. The population is now estimated at 900, and many extensive ditches are now built and in process of construction.

The conditions here are peculiar. On the east are high extensive mountains, affording late summer irrigation on that side of the valley, while upon the west side the mountains do not afford late irrigation, but the river water is very accessible and always abundant.

Another peculiarity exists in the soil or the climate, for only about one-half as much water is required here as in Ada or other counties.

The inhabitants here have formed associations for constructing and operating their own ditches, and say they need no outside aid to reclaim all the irrigable land in the valley. They deprecate and distrust such aid as an unnecessary interference, and say that their "home system" has all the strength needed to do the work, with the flexibility in the control to correct errors or redress grievances promptly.

This valley of the North Fork of the Payette, in its geographical position, its direct northerly course and its moderate fall, is very inviting as a railroad line, which, when built, can not fail to secure a fair traffic at once. Where a railroad ought to be constructed there is capital waiting to build such, and this route will not long remain unoccupied and unnoticed.

The south portion of Boise County is very productive in mineral but nearly worthless for agriculture. On the upper waters of Moore's Creek are situated the great "Boisé Basin" placer mines where at one time, eighteen or twenty thousand men might be counted washing out, with primitive appliances, more than \$60,000,000 worth of gold. The tailings cover all the valleys 15 to 20 feet deep. The hills to their very tops are terraced with ditches, and the gulches everywhere spanned with old flumes now mostly neglected and going to ruin, not because of exhaustion of the mineral wealth, but because of insufficiency of water and its storage.

All the hills in an area of 400 square miles are good placer ground if plenty of water for bed-rock flumes were available. It is said that this might be brought from upper South Fork of Payette through a gap near Pioneerville, but such would be a costly undertaking.

Main canals built and building, 37 miles, exclusive of those in the settlement of Garden Valley, Squaw Creek, Horse-shoe Bend and Squaw Creek flat.

	Acres.
Area irrigated and in process.....	83,500
Additional irrigable land.....	262,000

CASSIA COUNTY.

Total area of county, 5,100 square miles, or 3,264,000 acres.

One-half of this county is undulating, producing good grass; one-fourth is level farming land, and one-fourth is high mountains, where much snow accumulates during the winter.

Length of canals and ditches	miles..	314
Number of canals and ditches.....		303
Irrigated land.....	acres..	82,000
Irrigable land.....	do...	655,000

Besides the land above reported as irrigable there is a large body of rolling plains on the upper part of Salmon Falls River Valley, estimated at three-fourths of a million acres, situated too high to be reached with water except from far up Snake River, or by a canal through the Salmon Falls River cañon. The land is good, but its reclamation is thus made uncertain.

Only the streams from the mountains on the south of this county are available, and these are now fully utilized by the inhabitants to the full extent of their natural flow, without reservoirs. They have a great abundance of water usually until the latter part of June, and thereafter but very little. On this account and without reservoirs irrigation in this county has reached its maximum as now practiced, and the tendency at present is for the settlements to become smaller instead of larger.

The reclamation of all this body of fine land must principally come from Snake River at a point 600 or 700 feet higher than it is at Starrh's Ferry, or from a system of reservoirs to impound the water at points so situated as to readily cover all the land of value, and sufficient in size to perfect the entire crops on all the lands, to their full maturity.

Sites for about 25 reservoirs, covering areas from 20 to 2,000 acres each, with depth of water varying from 15 to 30 feet, have been found—in all sufficient for the 737,000 acres above reported as irrigable, the whole to be obtained at a cost not exceeding 80 cents per acre on the land thus benefited. Of these reservoirs a few may be selected that would cost \$50,000, which would relieve the present settlers and add 10,500 acres to the irrigated lands.

The water which nature supplies the earth is not measured in Idaho by the number of vertical inches of rain-fall during the year, but by the number of feet in depth of (compact) snow covering the mountains and high table-lands in the spring. This seldom fails to reach 6 to 8 feet, but in the winter of 1888-'89 the falling off was unprecedented. The best record of this falling off was reported by Mr. Thomas A. Starrh, whose observations were upon Snake River, at his ferry. Here the river is 800 feet wide, and the usual rise in the spring is 6.5 to 7 feet; this year it was only 2 feet. When it is considered that as the stream rises higher and higher the current becomes more and more rapid, we may conclude that Snake River did not convey more than one-fourth its usual quantity of water, and its season was also correspondingly shortened. Still there was water enough for all Idaho had it been held back by some system of retention until needed for irrigation.

CUSTER COUNTY.

Total area, 4,350 square miles.

This county has three distinct agricultural valleys, which embrace the principal portion of its irrigable lands.

Lost River Valley for about 45 miles in length and 6 miles in width lies in the southern part. Pahsimeroi on the northeast has a valley about 45 miles long by 10 miles wide; and Round Valley, on the Salmon River, near the center of the county, is about 10 miles in diameter, in which Challis, the county seat, is situated.

Lost River Valley:	Acres.	Round Valley:	Acres.
Irrigated.....	8,000	Irrigated.....	6,000
Irrigable.....	164,000	Irrigable.....	42,000
Pahsimeroi Valley:			
Irrigated.....	10,000	Total irrigated.....	24,000
Irrigable.....	240,000	Total irrigable.....	446,000

The soil of these valleys is of superior quality, and though high in elevation they are so protected by mountain ranges that immense herds of cattle, horses, and sheep find abundant pasturage through the winter. No railroad line is in or near this county; no route of emigrant travel through it. Even the Government surveys have scarcely touched it, until the present season some surveys are being made in the Lost River Valley. The only encouragement the settlers have is the excellence of soil, their ready market at their prosperous mining camps, and in their salubrious climate. Their

season for irrigation is not a long one, and it is probable that canals around these valleys on a system of total circumvection would be sufficient without reservoir storage, at least until the whole reclaimable area shall become occupied. It is estimated that about 220 miles of canal would do this, and that it would have no aqueducts or costly mechanical structures; that all the surplus water from the gulches could be passed over weirs constructed of rough stone, everywhere at hand, and that the cost of the whole would not reach \$1 per acre on the land supplied.

ELMORE COUNTY.

Total area of county, 2,700 square miles.

North of the base line the surface in this county is mountainous and unfit for cultivation, except about 20,000 acres along South Boise River. The soil is here very productive and may be irrigated by ditches from the river at an expense of about \$10,000.

South of the base line in Elmore County the surface inclines rapidly toward Snake River and is part of the great valley of that stream containing 450 square miles, 210,000 acres of which is very good farming land. The creeks traversing this district flow from the low range of mountains skirting the south side of South Boise River, which do not keep up the flow of water long in the spring. - To irrigate this fine tract of country a belief existed that water might be brought through this range of hills; but upon examination and survey, it is said to have been found very expensive. It therefore seems imperative that this portion of Elmore County must look to Snake River at some point above the American Falls for its irrigation.

There are no canals or ditches in this county, except such as are supplied by springs, which are distributed to quite a number of ranches with astonishing results; four crops of alfalfa yielding 8 tons of hay per acre in one season is reported.

In this county, about 12 miles southwest of Rocky Bar, Mr. A. D. Foote, engineer in charge of the United States irrigation survey in Idaho, has discovered locations for five great reservoirs with an average capacity of nearly 1,000,000,000 cubic feet of water. Nature made these reservoirs, now slightly out of repair, but at small expense they may be again restored. These reservoirs can not serve to irrigate any of Elmore County; but as tributaries of Boise River they will abundantly re-enforce that stream to irrigate the half million acres of farming lands in Ada County, if this plan shall be found cheaper than by extending the great Snake River canal.

In this connection provision should be made to supply with water the extensive placer grounds lying along Snake River just above its confluence with Boise River.

	Acres.
Land irrigated.....	10,000
Land irrigable.....	230,000

LEMHI COUNTY.

Total area, 4,300 square miles.

The total area of this county is about 2,750,000 acres, of which the irrigable portion is estimated by the county surveyor, Hon. J. W. Birdseye, at 500,000 acres, or 18 per cent. of the whole. Its principal streams are the Salmon and Lemhi Rivers, the valleys of which contain most of the irrigable land, lying in two planes; the lower one, not much above the level of the river, being easily irrigated, contains most of the present population; but the upper one, called "the bench" lands, situated upon a plane 50 to 100 feet above the rivers, is yet unimproved, although the soil for most purposes is considered preferable. The expense of bringing the river water upon the "bench lands" is too great for the settlers, and the water from the small tributaries will not afford a lasting supply unless held back in storage reservoirs. For this purpose many sites favorable for construction of reservoirs have been located; but, as is the case in several other counties, irrigation surveys and estimates must be made before an intelligent decision can be reached, as between the supply from local lateral streams impounded, or from the main rivers through long and large canals.

For the re-enforcement of the Lemhi River there is a very good site for a large reservoir at its head, near the county line, from which point to the mouth of the Lemhi the valley descends at an average rate of 40 feet per mile, thus giving the hydrographic engineer easy opportunity to cover with water every arable acre in the valley.

To cover the "bench lands" along the Salmon River, if the river be the source of supply, no reservoirs would be needed; and, as the fall is only about 15 feet per mile, a few long canals, instead of frequent short ones, would probably be adopted.

The plan of frequent ditches, one higher than another, and covering it, as it were, is not desirable, the low lands being in danger of an uncontrollable oversupply and excessive saturation.

Besides the irrigable lands of the main valleys of the Salmon and Lemhi Rivers, estimated at 500,000 acres, there is a wide expanse of such land at the head of the Lemhi, also some fine tracts on the Pahsimeroi and Birch Creeks, all of which may easily be supplied with irrigation, and thus swell the estimate of practicable irrigation in Lemhi County to at least 600,000 acres.

Land irrigated	acres..	10,000
Land irrigable	do....	600,000
Number of (small) ditches, 250; aggregate length.....	miles..	800
Number of (miners') ditches (additional)	do....	200

LOGAN COUNTY.

Total area, 5,200 square miles.

This is a large county, most of which is good land and susceptible of irrigation when entered upon with adequate means and on well-matured plans.

Irrigation has now reached its limit so far as homestead settlers may accomplish it with their limited means.

Along Camas Creek is located the principal agricultural settlement, extending about 30 miles in length by 3 in width. The gulches furnish water for only a limited period, but numerous large springs, together with a soil naturally moist, combine to make this a prosperous settlement. A number of small reservoirs are recommended for this valley, by means of which the area of cultivation would be doubled and furnish late irrigation to the ranches now improved.

Silver Creek, fed by numerous springs, carries now, in this exceptionally dry season, 7,000 miners' inches, and supplies 6,000 acres of cultivated land. The utility of water and the wealth in our basaltic soil when irrigated, are here illustrated in sharp contrast with the barrenness all around, where the soil is the same but without water.

Along Big and Little Wood Rivers and on Clover and Fish Creeks are settlements to the extent of easy irrigation, which, for so dry a season as the present, has proved to be overdone, compelling some settlers to go with their stock to the mountains, and some others to leave this section of country.

	Acres.
Land irrigated.....	50,000
Land irrigable	1,250,000

This great, almost compact body of fine arable land can be covered by the proposed Snake River Canal, or quite as abundantly from the Wood Rivers, which have their sources in the main Sawtooth, a range of mountains which is very high and prolongs its snow-melting season until August.

Good sites for storage on these rivers are not wanting. On the Upper Little Wood River one site is reported where a dam 600 feet long and 100 feet high would form a pool a half mile wide by 5 miles long, sufficient for supplying with water 80,000 acres of land during the irrigating season of one hundred days.

An area of about 80,000 acres might be supplied from an immense outpouring of water from the walls of the cañon on Snake River above Salmon Falls. This water is supposed to come from the "sinks" of Lost River, but can not be conducted out from the cañon except by a flume 2 or 3 miles long.

Four good sites for reservoirs are reported in Alturas County, on Big Wood River, sufficient in size to supply all the valley of that river to its mouth.

At a point a few miles above Starrh's Ferry it is proposed to construct a dam in Snake River 35 feet high, and to extend a canal to a point opposite the great Shoshone Falls so as to cover about 200,000 acres, including several hundred acres of rich placer-mining ground. For this purpose a company is organized, surveys and estimates have been made, and preparations begun for commencing the work.

Recommendation has been made to the proper authorities that a few artesian wells be sunk in this county and elsewhere as experimental, at Government expense. If successful individuals, would thus be induced, in such localities, to sink other wells for themselves.

Much field engineering will be required in Logan County and works of considerable magnitude constructed; but the reclamation of so large an area of good land is an inducement sufficient to warrant twice the expenditure of money necessary for the work.

ONEIDA COUNTY.

Total area, 2,600 square miles.

Irrigation in this county has been accomplished to its fullest extent until assisted by storage reservoirs on the small tributaries or canals from the main Bear and Snake Rivers. Some of the smaller reservoirs will doubtless soon be built by the inhabit-

ants; but for the larger body of the unreclaimed lands in Oneida County main canals on a high level must be constructed; notably, in townships 14 and 15 south, range 38 east, a body of 40,000 acres awaits a canal from Bear River.

The report from this county states that a syndicate is organized in Utah for monopolizing the waters of Bear River, with the purpose of carrying it into that Territory for disposal, against which diversion from Idaho the people of Oneida County protest.

About 20,000 acres of irrigable land in this county are in Snake River Valley outside the Fort Hall Indian Reservation, which all depends upon the proposed canal from that river.

	Acres.
Area now irrigated in Oneida	38, 800
Area irrigable and unreclaimed	148, 000

The benefits of irrigation are nowhere in Idaho more clearly apparent than in Oneida County, nor the process of its utilization anywhere better understood. Their plan of ownership and control of the water by those who are the consumers works well here, where the associations are small, and probably would work as well on a scale very much larger.

OWYHEE COUNTY.

Total area, 7,812 square miles.

In this county irrigation has reached the extent possible by the present settlers and from the natural supply of the local streams. Its arable lands are mainly in the great valley of Snake River, and, like the rest of the valley below the American Falls, they are so high above that river's channel that the water supply for irrigating these lands must come from some point above the falls, or from the lateral streams coming in from the mountains. From this latter source there is no question as to the abundance of water if sufficient storage be provided, and for this purpose good sites have been found for most of the needed localities.

As the waters of these lateral streams in Owyhee County subside about one month earlier than those of Snake River, a corresponding increase of storage capacity will be necessary. This and the existence of cañons at points at and below the foot-hills will probably complicate the subject of the water supply in this county and call for more exploration and more engineering skill than in any other part of Idaho. A very careful hydrographic survey is here necessary.

Area irrigated	acres..	21, 300
Area irrigable	do....	248, 500
Number of ditches		66
Total length of ditches	miles..	153

About 50 miles of small ditches, also about 60 miles of ditches used for mining and milling purposes, are not included in the above.

WASHINGTON COUNTY.

Total area, 2,900 square miles.

This county is bounded on the east by a low range of mountains, and on the west by Snake River, which is in a deep valley too low to be brought out for irrigation.

The irrigable lands of this county lie in a horse-shoe form, being about 100 miles around its outer limits, and 30 miles across the chord of its inner segment, embracing an area estimated at a half million acres, less than one-tenth of which is yet irrigated, and that which is irrigated is but poorly supplied with water. Improved lands here that have water are worth \$20 per acre.

The mountains that supply this valley with water are not high nor extensive; their snows melt away in the early spring; the flood water is soon gone, and the long, dry season then commences. The inhabitants of the lower valley find that the settlers above them can absorb all the water at this season when it is most needed.

On this subject Hon. T. C. Galloway, of Weiser, says:

"Unless means are devised for holding back, and a better way established for distributing and using, water in this county, the larger and longer ditches will be abandoned, while the smaller ones will become sources of strife and litigation."

The Weiser River with its 25 tributaries are all within this county, and the county embraces the whole of the Weiser drainage, and no more. It is therefore a separate drainage and irrigation district, the storage system the only possible plan, and it in this locality is a great and pressing want. Sites for storage reservoirs are reported to exist on almost every tributary to Weiser River, and the work of improving them ought to begin at once.

Here is a county exactly comprising one irrigation district and no more, where the storage system only can be adopted, and where no conflicts with other interests do or ever can exist; where there are 40 miles of main ditches covering 40,000 acres now improved but only feebly supplied with water, and where ten times as much more good land lies a hopeless desert. Action might here be taken without delay or further investigation, as well now as at some future period, to construct these reservoirs and test the plan of local control at the same time.

Congress might grant the remaining Government land in this county that can be irrigated to the county authorities, to aid in the construction of the reservoirs and main canals, authorize the county commissioners to issue \$400,000 in "water bonds" and to construct and control the necessary works under iron-clad regulations governing the expenditures and accounts thereof. The net proceeds from the sale of lands and water rents would soon pay off the bonded indebtedness, and pay the Government its price for the land also, if that be desired. The tax duplicate of Washington County would soon foot up \$10,000,000, and the water rents furnish a perpetual fund sufficient for all county purposes. To the people of the county it would socially prove a blessing, to the county itself a speculation, and to the Government a much needed and very valuable experiment on the great problem of irrigation and water control.

The immediate surrender of this isolated basin by the Government would not interfere with the plans or prospects of any other locality, nor is there any cause for awaiting the surveys of this (or indeed any other) region, while there is cause for hastening to relieve the present settlers from impending distress.

Land partly irrigated	acres..	40,000
Land irrigable.....	do...	500,000
Main ditches	number..	5
Aggregate length.....	miles..	40

There are also numerous small ditches which have not been reported.

IDAHO, SHOSHONE, NEZ PERCES, LATAH, AND KOOTENAI COUNTIES.

Reports from these counties all agree in describing the surface of the country as being intersected by rivers, which lie too far below the arable plains for their waters to be brought out for irrigation.

Besides this, the rain-fall is usually sufficient for all agricultural purposes, and very satisfactory crops of grain, grass, vegetables, and fruits grow and mature even as far north as Bonner's Ferry, on Kootenai River, in Kootenai County. Some of the upland prairies are extensive, composed of a warm gravel and loam soil; timber is never inconvenient, and with a climate humid enough for the farmer there is nothing to prevent the formation of dense and prosperous settlements, except the want of water for stock and domestic use.

From the great Camas Prairie in Idaho County, and the prairie between Hayden and Fish Lakes in Kootenai County, come no complaints for want of water for irrigation, but they do want water for their stock, and urgently request that the Government sink artesian wells at a few widely separated localities as experimental. They are too poor "to take the chances," but not too poor to sink such wells for themselves when they know the cost and have a reasonable certainty of water.

In the prairie last named three wells have been sunk at a distance of 3 and 5 miles apart, to the depth of 172, 225, and 311 feet, respectively, and some water obtained in each by pumping, but it is believed an artesian flow might be obtained at the depth of 1,000 or 1,200 feet.

As the Lewiston and Coeur d'Alene land districts are not by the General Land Office classed as "desert" land districts and the means of irrigation are not needed nor asked for, the call upon the Government for experimental artesian wells is not without precedent nor without abundant need. There are many smaller prairies in these counties equally desirable for settlement and equally dependent on outside aid in this direction, in all of which population and improvement would soon follow the successful search for water. Nothing more is wanted and nothing more is wanting.

The mining interests in this pan-handle of Idaho are rapidly advancing, and the demand for agricultural supplies is correspondingly on the increase. The way to "open up" these lands to settlement and to supply the increasing mining camps is by the means of experimental artesian wells.

Recapitulation.

Counties.	Approximate area.	Acres irrigated and in process as reported.	Acres irrigable as reported.	The irrigable land now irrigated.	Total area reclaimable.
	<i>Sq. miles.</i>	<i>Number.</i>	<i>Number.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Ada	2,424	60,000	900,000	6.25	62
Alturas*	2,100	14,500	268,000	5.13	21
Bear Lake	†1,300	21,500	40,000	35.5	74
Bingham †	12,364	284,750	2,503,500	10.5	35.5
Boisé	3,024	83,500	262,000	24	18
Cassia	5,100	82,000	655,000	11.1	22.5
Custer	4,350	24,000	446,000	5.1	17
Elmore	2,700	10,000	230,000	4.2	14
Lemhi	4,300	10,000	600,000	1.64	22.2
Logan	5,200	50,000	1,250,000	2.6	39
Oneida	2,600	38,800	148,000	20.8	11.2
Owyhee	7,812	21,300	248,500	8	42
Washington	2,900	40,000	500,000	7.4	29
Total	56,174	740,350	8,051,000	9.2	24

* Much on Lost River and lava bed.

† This area includes the lake.

‡ Much of this is "in process."

The counties of Idaho, Kootenai, Latah, Nez Perces, and Shoshone, as before stated, are not arid and require very little irrigation, hence are not included in the above tabulated statement.

I am, sir, very respectfully, yours,

JOSEPH C. STRAUGHAN,
U. S. Surveyor-General for Idaho.

To His Excellency GEORGE L. SHOUP,
Governor of Idaho, Boise City.

COAL.

Vigorous attention has been given during the past year to prospecting for coal mines, with promising results. I have just examined a piece of coal taken from a mine recently discovered, 20 miles from Boise City. The vein is reported to be 4½ feet thick.

Discoveries have been made in Washington, Latah, Kootenai, Idaho, Nez Perces, Bingham, and Lemhi Counties, and probably in other counties not yet reported. The development is not sufficient to justify an estimate of the value of these mines. It is fair to predict, however, that some of them will prove to be valuable.

MINERAL SPRINGS.

The soda springs at Soda Springs station on the Oregon Short Line Railway, Bingham County, are attracting wide attention. It is only recently that the superiority of this mineral water over that of other springs became notable. Bottling and shipping this water as an article of commerce has reached that standard as to be entitled to notice. I am informed by the agent in charge that 10,700 cases have been bottled and shipped for consumption during the year. Cases contain 50 bottles each. It is predicted that double the above amount will be consumed during the next year.

SALT SPRINGS.

About 60 miles northeast of Soda Springs, in a small side valley, which opens into Salt Creek, near what is known as the old Lander

emigrant road, leading from South Pass to Oregon, are the salt springs of Oneida County.

The producing capacity of these springs is placed at 4,500 pounds per day. Idaho obtained its principal supply of dairy and table salt from these springs from 1866 until the completion of railroads in the Territory.

The cost of transportation to shipping points was too great to compete with these roads, and the result is that the salt product from the springs has for the present ceased; but, in the near future, it is fair to assume that these works will be made to furnish, upon a larger scale than ever, a superior article of salt to supply home consumption.

METEOROLOGICAL.

I am indebted to Sergt. William A. Korts, U. S. Signal Corps, Boise City, Idaho, for complete data from the records in his office from January, 1878, to June, 1889.

This station is an important one, and should be continued. In past years there was complaint of the difficulty of getting prompt reports. No blame was attached to the officer in charge; there being but one wire, it frequently occurred that there was delay in transmission. This difficulty will in a short time be overcome, as the Western Union is now stringing a wire from Pocatello to this city. I annex the sergeant's report.

Meteorological data from the records of the United States Signal Office, Boise City, Idaho

Dash indicates temperature below zero.

Month and year.	Temperature.					Relative humidity.	Wind.				Precipitation.	Number of days.				
	Maximum.	Minimum.	Mean.	Minimum below 32°	Maximum above 90°		Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Total movement.		Cloudless.	Partly cloudy.	Cloudy.	Rainy.	Average cloudiness (scale 0-10).
Jan.	Deg	Deg.	Deg	No.	No.	P.c.		Mls.		Miles.	Inch.					
1878.....	55	7	34	17	0	66	S.	20	NW.	3,134	1.73	6	15	10	11	6.0
1879.....	53	3	26	28	0	74	S.	24	S.	3,442	3.62	8	10	13	14	6.0
1880.....	57	13	38	12	0	66	SE.	32	SE., W.	5,397	0.90	1	10	20	9	5.0
1881.....	52	13	30	25	0	74	NW.	20	NE.	2,829	3.62	4	8	19	11	3.0
1882.....	49	3	24	30	0	86	W.	20	E.	2,863	1.62	7	8	16	12	6.4
1883.....	49	-27	21	28	0	84	NW.	24	SE., NW.	2,270	3.77	10	8	13	10	5.7
1884.....	62	20	28	30	0	81	W.	28	W.	2,432	1.75	15	6	10	7	4.3
1885.....	59	-7	24	28	0	82	SE.	18	SE.	1,789	1.50	9	11	11	12	5.5
1886.....	53	-1	28	25	0	83	SE.	26	SE.	2,907	2.96	8	13	10	18	5.7
1887.....	55	16	36	24	0	77	SE.	24	N., E., W.	4,268	2.89	3	13	15	15	7.1
1888.....	61	-28	18	25	0	78	NW.	20	SE.	2,245	1.54	8	7	16	13	6.2
1889.....	47	2	24	31	0	76	N.	22	S.	1,779	0.44	12	7	12	6	3.4
Feb.																
1878.....	57	28	40	8	0	67	NE., E.	20	NE., E.	3,877	2.18	1	14	13	14	6.0
1879.....	64	9	40	7	0	67	SE.	36	SE.	3,634	1.42	2	12	14	13	7.0
1880.....	53	11	32	25	0	70	SE.	28	SE.	3,615	0.94	5	12	12	10	6.0
1881.....	59	16	39	12	0	74	SE.	24	W.	3,328	3.51	4	8	16	14	3.0
1882.....	55	-5	31	16	0	81	E.	20	SE., E.	3,537	1.73	4	1	18	12	7.8
1883.....	54	-12	21	28	0	80	NW.	28	NE.	2,036	1.20	16	8	4	3	3.1
1884.....	57	-8	31	19	0	79	NW.	25	SE.	3,151	1.32	10	8	11	11	5.3
1885.....	59	13	38	11	0	80	NW.	20	NW.	2,614	2.29	5	7	16	17	6.7
1886.....	65	23	40	17	0	72	NW.	25	NW.	2,550	0.94	15	8	5	8	3.7
1887.....	53	6	30	27	0	77	SE.	23	SE.	3,474	1.13	4	13	11	10	6.5
1888.....	64	24	40	24	0	70	W.	24	N.	2,303	0.50	12	13	4	6	3.8
1889.....	64	10	35	27	0	71	W.	20	NW.	1,628	0.04	5	16	7	2	4.1

Meteorological data from records of United States Signal Office, Boise City, Idaho—Cont'd.

Month and year.	Temperature.					Relative humidity.	Wind.				Precipitation.	Number of days.				
	Maximum.	Minimum.	Mean.	Minimum below 32°	Maximum above 90°		Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Total movement.		Cloudless.	Partly cloudy.	Cloudy.	Rainy.	Average cloudiness (scale 0-10).
Mar.	Deg.	Deg.	Deg.	No.	No.	P.c.		Mls.		Miles.	Inch.					
1878.....	75	26	48	7	0	62	S.	24	E.	3,169	1.63	3	20	8	9	5.0
1879.....	75	27	47	2	0	60	SE.	36	SE.	5,081	3.04	4	10	17	14	7.0
1880.....	64	10	37	22	0	64	SE.	28	NW., SE.	5,082	0.50	8	8	15	4	6.0
1881.....	76	27	44	10	0	66	W.	20	W.	4,269	0.64	14	3	4	10	2.0
1882.....	73	9	37	22	0	73	W.	28	SE.	4,311	1.54	8	15	8	10	5.0
1883.....	72	28	46	12	0	65	W.	28	SE.	2,598	0.28	19	9	3	2	2.8
1884.....	59	29	44	6	0	69	SE.	23	NW.	4,370	2.78	7	13	11	19	5.9
1885.....	68	28	46	8	0	62	SE.	23	NW.	2,792	0.03	23	7	1	2	1.9
1886.....	69	22	40	22	0	61	SE.	30	NW.	4,666	0.82	11	16	4	10	4.4
1887.....	74	24	48	10	0	60	SE.	24	NW.	3,433	1.33	11	7	13	6	5.6
1888.....	66	18	43	21	0	60	SE.	32	W.	4,506	0.51	7	13	11	7	5.2
1889.....	74	30	50	5	0	53	W.	33	W.	3,543	1.03	7	16	8	11	4.7
Apr.																
1878.....	77	23	50	8	0	53	N.	28	NW.	3,496	0.37	7	12	11	7	5.0
1879.....	80	32	54	0	0	53	NW.	28	NW.	5,144	1.42	6	15	9	9	5.0
1880.....	79	30	48	2	0	62	SE.	32	NW.	5,151	1.50	8	10	12	11	6.0
1881.....	78	32	53	0	0	59	W.	20	W.	3,290	1.34	6	19	5	6	2.0
1882.....	74	29	48	5	0	61	W.	29	W.	5,064	2.33	9	13	8	8	5.1
1883.....	68	18	44	13	0	76	NW.	28	NE., NW.	3,973	0.61	10	9	11	10	5.5
1884.....	72	36	52	0	0	61	NW.	28	SE.	3,855	0.78	10	15	5	9	4.4
1885.....	74	28	53	2	0	56	NW.	27	NW.	3,673	0.09	19	10	1	3	2.3
1886.....	74	29	48	5	0	59	NW.	24	SE.	4,556	2.43	8	13	9	13	5.2
1887.....	86	22	49	6	0	56	NW.	28	NW.	3,694	1.54	4	14	12	7	6.1
1888.....	88	25	56	4	0	46	W.	40	E.	3,328	0.12	10	16	4	3	3.7
1889.....	84	30	55	1	0	49	W.	25	W., NW.	3,292	1.72	9	16	5	8	4.8
May.																
1878.....	86	29	57	1	0	53	N., NW.	24	NW.	4,632	1.18	8	14	9	10	5.0
1879.....	79	30	55	1	0	52	NW.	28	NW.	3,955	0.92	1	20	10	8	7.0
1880.....	83	34	53	0	0	54	NW.	28	NW.	5,145	1.57	5	17	9	11	6.0
1881.....	88	36	58	0	0	50	W.	28	W.	4,291	0.07	11	12	8	1	2.0
1882.....	87	38	58	0	0	53	W.	28	NW.	4,985	0.34	12	14	5	7	4.5
1883.....	84	31	56	1	0	60	NW.	28	SE.	3,899	2.12	11	16	4	6	4.2
1884.....	83	35	61	0	0	65	NW.	23	NW.	3,670	0.92	16	13	2	11	3.4
1885.....	87	37	59	0	0	63	NW.	24	NW.	3,230	3.14	14	13	4	11	3.9
1886.....	91	26	59	1	1	52	NW.	20	NW., N.	3,122	0.61	15	15	1	4	3.2
1887.....	97	26	60	6	4	52	NW.	33	NW.	3,259	0.51	9	18	4	7	4.4
1888.....	90	32	60	1	0	50	W.	26	NW.	3,379	0.94	12	13	6	8	4.4
1889.....	92	34	59	0	1	54	W.	32	W.	3,929	2.76	6	16	9	12	5.2
June.																
1878.....	96	43	70	0	3	43	N.	24	NW.	3,584	0.86	10	16	4	4	5.0
1879.....	93	41	64	0	1	52	NW.	28	NW.	3,993	1.43	6	13	11	6	6.0
1880.....	91	40	64	0	2	40	NW.	24	SW.	3,413	0.11	13	14	3	1	4.0
1881.....	90	38	64	0	0	47	W.	32	NW.	3,281	0.29	11	15	4	5	1.7
1882.....	95	34	66	0	5	47	W.	28	W.	3,507	0.29	13	16	1	4	3.2
1883.....	98	44	69	0	8	53	NW.	28	SE.	3,817	0.20	16	12	2	3	2.8
1884.....	95	48	67	0	2	62	SE.	26	S.	3,254	3.41	10	13	7	17	4.6
1885.....	99	41	64	0	3	63	NW.	30	W.	3,065	1.08	13	12	5	9	3.8
1886.....	96	40	67	0	5	48	NW.	21	NW.	3,302	0.44	20	9	1	4	2.2
1887.....	95	38	63	0	3	57	NW.	24	E.	1,778	1.58	10	15	5	9	4.4
1888.....	90	40	64	0	0	54	W.	28	W.	2,253	3.24	3	15	12	10	6.2
1889.....	98	45	69	0	7	35	W.	24	W.	3,175	0.19	15	11	4	1	3.4
July.																
1877.....	106	44	73	0	.....	39	NE.	30	N.	3,274	0.35	17	12	2	2	3.0
1878.....	97	46	74	0	13	38	N.	16	NW.	3,203	0.31	19	10	2	2	3.0
1879.....	100	43	73	0	6	35	NW.	36	NW.	3,390	Tr.	16	14	1	0	3.0
1880.....	98	41	72	0	11	36	NW.	24	W.	3,330	0.02	14	15	2	1	3.0
1881.....	101	46	71	0	14	42	W.	20	SE.	3,459	0.13	17	13	1	3	2.7
1882.....	95	53	75	0	16	40	W.	32	NW.	3,476	Tr.	21	10	0	0	1.8
1883.....	100	40	73	0	17	29	NW.	32	.....	3,122	0.00	.....	.....	.....	.....	.....
1884.....	92	48	69	0	3	59	NW.	33	NW.	3,236	0.60	23	7	1	3	1.9
1885.....	98	51	74	0	12	48	NW.	25	S.	3,033	0.23	20	9	2	4	2.2
1886.....	107	44	75	0	14	42	NW.	22	W.	3,292	0.24	21	9	1	2	2.2
1887.....	100	41	74	0	16	39	NW.	18	SW.	1,720	0.12	22	8	1	3	2.0
1888.....	102	43	73	0	22	40	W.	23	W., E.	1,643	0.48	20	4	7	4	2.8

Meteorological data from records of United States Signal Office, Boise City, Idaho—Cont'd.

Month and year.	Temperature.					Relative humidity.	Wind.				Precipitation.	Number of days.				
	Maximum.	Minimum.	Mean.	Minimum below 32°	Maximum above 90°		Prevailing direction.	Maximum velocity.	Direction at time of maximum velocity.	Total movement.		Cloudless.	Partly cloudy.	Cloudy.	Rainy.	Average cloudiness (scale 0-10).
Aug.	Deg	Deg.	Deg	No.	No.	P.c.		Mls		Miles.	Inch.					
1877.....	98	43	72	0	0	35	NE.	16	SE.	2,367	0.09	18	11	2	3	3.0
1878.....	98	53	75	0	13	42	NW.	24	E.	3,004	0.50	18	9	2	3	2.0
1879.....	103	46	74	0	14	35	NW.	28	W.	3,060	0.03	17	12	2	1	3.0
1880.....	97	42	69	0	7	40	NW.	28	E., NW.	3,233	0.02	22	6	3	1	2.0
1881.....	100	39	67	0	10	42	W.	16	E.	3,218	0.00	22	8	1	0	2.0
1882.....	102	41	72	0	13	42	W.	32	NW.	2,720	0.00	4	9	18	0	1.0
1883.....	105	49	73	0	14	42	NW.	26	SE.	2,179	Tr.	22	9	0	0	1.6
1884.....	95	52	74	0	12	50	NW.	20	NW.	2,839	0.07	26	5	0	1	1.5
1885.....	96	50	72	0	10	49	NW.	28	E.	2,464	0.09	22	8	1	4	1.8
1886.....	98	48	74	0	16	37	NW.	15	SE.	2,348	Tr.	26	5	0	0	1.2
1887.....	97	39	70	0	11	40	NW.	28	E.	1,356	0.29	20	9	2	3	1.9
1888.....	103	47	73	0	15	36	W.	19	N.	1,111	0.58	28	1	2	3	2.0
Sept.																
1877.....	91	32	61	0	0	49	S.	16	NW.	2,599	0.27	9	13	8	3	5.0
1878.....	96	34	60	0	1	52	SE.	20	SE.	3,503	0.27	14	13	3	2	3.0
1879.....	92	36	66	0	3	37	NW.	20	SW.	2,716	0.14	19	9	2	2	2.0
1880.....	95	35	59	0	2	40	NW.	20	NW.	2,886	0.11	22	7	1	1	2.0
1881.....	88	30	57	2	0	49	W.	24	W.	3,202	0.25	19	5	6	4	3.3
1882.....	92	30	60	1	1	53	W.	24	NW.	2,237	1.36	28	3	0	6	3.5
1883.....	94	36	62	0	4	55	NW.	20	NW.	2,113	0.20	19	10	1	2	2.4
1884.....	80	35	55	0	0	64	W.	21	NW., W.	2,712	2.11	13	10	7	7	4.1
1885.....	90	42	62	0	0	57	SE.	25	NW.	2,590	0.39	20	9	1	3	2.3
1886.....	88	28	59	1	0	44	NW.	21	NW.	2,399	Tr.	26	3	1	0	1.0
1887.....	93	33	63	0	2	46	NW.	25	W.	739	0.14	20	8	2	1	2.3
1888.....	100	40	68	0	10	39	W.	18	SE.	1,908	0.06	19	8	2	1	2.4
Oct.																
1877.....	74	21	49	6	0	57	S.	14	SW.	1,942	0.85	12	13	6	8	4.0
1878.....	74	19	48	7	0	64	SE.	36	-----	3,398	0.30	14	15	2	4	4.0
1879.....	85	25	50	3	0	54	NW.	26	SE.	3,572	0.76	15	11	5	3	3.0
1880.....	85	24	54	8	0	47	NW., SE.	22	NW.	2,873	0.50	18	7	6	5	3.0
1881.....	73	23	46	4	0	67	W.	22	W., SE.	3,216	2.12	10	8	13	11	5.7
1882.....	64	26	48	5	0	73	W.	24	E., SE.	3,358	2.94	18	4	8	14	6.5
1883.....	73	26	44	6	0	77	NW.	24	NW.	2,113	4.06	8	11	12	13	5.7
1884.....	77	30	51	2	0	60	SE.	25	NW.	3,556	1.52	13	14	4	5	3.8
1885.....	79	32	53	1	0	61	SE.	20	SW.	2,155	0.58	18	12	1	6	2.3
1886.....	82	25	49	9	0	63	SE.	18	NW.	2,481	0.72	10	13	8	9	4.5
1887.....	87	16	50	11	0	51	NW.	27	SW.	1,290	0.03	20	9	2	2	2.4
1888.....	82	25	53	5	0	51	W.	22	SE.	2,092	0.78	11	5	15	6	5.2
Nov.																
1877.....	63	18	42	11	0	69	S.	16	S., W.	2,793	2.05	5	10	15	16	7.0
1878.....	70	18	42	13	0	61	SE.	36	SE., NW.	3,041	0.53	10	16	4	5	4.0
1879.....	62	16	37	17	0	66	SE.	22	NW.	3,056	1.20	10	10	10	9	5.0
1880.....	60	7	32	23	0	60	NW.	20	NW.	2,341	0.48	11	10	9	7	4.0
1881.....	61	18	36	20	0	74	NW.	6	E.	2,864	0.94	12	8	10	4	4.7
1882.....	59	15	35	23	0	74	NW.	28	NW.	2,601	0.08	9	6	16	3	4.4
1883.....	58	19	39	23	0	76	NW.	25	NW.	2,028	0.46	14	6	10	4	4.5
1884.....	62	24	40	13	0	74	W.	13	NW.	1,503	0.12	16	12	2	1	2.8
1885.....	62	30	46	6	0	75	SE.	28	SE.	4,105	2.07	3	12	15	17	7.1
1886.....	58	9	33	30	0	71	SE.	21	SE.	2,463	0.43	17	10	3	3	3.3
1887.....	72	6	39	21	0	60	NW.	26	NW.	1,516	0.04	12	14	4	2	4.0
1888.....	65	18	38	24	0	74	W.	18	E.	1,797	1.00	8	11	11	9	5.5
Dec.																
1877.....	54	8	32	31	0	68	W.	16	N.	1,370	0.01	8	22	1	1	4.0
1878.....	53	7	30	21	0	69	NW.	36	S.	2,304	0.35	9	11	11	7	5.0
1879.....	59	4	31	18	0	76	NW.	24	NW.	3,707	3.65	2	6	23	18	8.0
1880.....	52	19	35	17	0	76	SE.	24	SE.	3,275	4.01	4	1	26	22	8.0
1881.....	54	16	33	26	0	81	W.	24	E.	2,534	0.65	7	12	12	8	5.0
1882.....	58	4	32	28	0	81	NW.	20	SE.	2,276	2.20	10	14	6	10	6.8
1883.....	4	30	3	0	0	80	NW.	26	SW.	2,753	2.27	14	5	12	8	4.9
1884.....	48	7	28	29	0	80	SE.	19	W.	2,529	5.67	9	7	15	17	6.0
1885.....	60	6	35	23	0	86	SE.	26	SE.	2,755	1.07	8	14	9	14	5.5
1886.....	60	21	38	21	0	80	SE.	18	SE.	2,672	2.64	5	14	12	19	6.8
1887.....	53	9	33	22	0	76	SE.	30	SE.	2,917	1.74	9	6	16	12	6.3
1888.....	62	10	36	20	0	72	E., SE.	26	SE.	2,362	1.34	5	12	14	9	5.1

IDAHO ALTITUDES.

Elevations of prominent towns, lakes, valleys, etc.

Name.	Eleva- tion.	Name.	Eleva- tion.
	<i>Feet.</i>		<i>Feet.</i>
Albion.....	4,400	Lake Coeur d'Alene.....	2,150
Alturas Lake.....	6,600	Long Valley.....	3,700
American Falls.....	4,320	Murray.....	2,750
Atlanta.....	5,525	Malad City.....	4,700
Bear Lake.....	5,900	Market Lake.....	4,795
Bellevue.....	5,200	Montpelier.....	5,793
Blackfoot City.....	4,523	Mouth of Port Neuf River.....	4,522
Bloomington.....	5,985	Mount Idaho City.....	3,480
Boise City, capital of Idaho.....	2,800	Montana Mine.....	9,500
Big Camas Prairie, Alturas County.....	5,000	Meade Mountain.....	10,540
Big Camas Prairie, Idaho County.....	3,500	Malad Divide.....	9,220
Bonanza City.....	6,400	Oneida Salt Works.....	6,300
Burke.....	3,900	Oneida (town).....	5,700
Camas Station.....	4,722	Oxford.....	4,862
Coeur d'Alene Mission.....	2,280	Paris.....	5,836
Craig Mountain.....	4,080	Pocatello.....	4,512
Custer Mountain.....	8,760	Paris Peak.....	9,522
Caribou Mountain.....	9,854	Placerville.....	5,100
Centerville.....	4,825	Putnam Mountain.....	8,933
Challis.....	5,400	Quartzburg.....	5,115
Clawson Toll Gate.....	4,300	Rathdrum.....	2,000
Custer City.....	6,560	Ross Fork Station.....	4,394
Dry Creek Station.....	5,689	Red Rock Ranch.....	4,792
Eagle Rock.....	4,720	Rock Creek.....	4,513
Estes Mountain.....	10,050	Rocky Bar.....	5,200
Fort Hall.....	4,783	Red Fish Lake.....	6,600
Fort Lapwai.....	2,000	Sawtelle's Peak.....	9,070
Franklin City.....	4,516	St. Charles.....	5,932
Florida Mountain.....	7,750	St. George.....	5,771
Florence.....	8,000	Salmon City.....	4,030
Fish Haven.....	5,932	Soda Springs.....	5,779
Forks of Lolo.....	4,450	Silver City.....	6,680
Gentile Valley (head).....	5,245	Sawtooth City.....	7,000
Galena City.....	7,900	Shoshone.....	4,587
Gladiator Mine.....	9,700	Summit, between Challis and Bonanza.....	9,100
Henry Lake.....	6,443	Summit, between Boise City and Idaho.....	4,815
Hailey.....	5,350	Summit, between Idaho City and Cen- terville.....	4,812
Idaho City.....	4,263	South Mountain City.....	6,450
Junction Station.....	6,329	Salmon Falls.....	3,226
Jackson Lake.....	6,806	War Eagle Mountain.....	7,980
Ketchum.....	5,700	Weston.....	4,600
Lewiston.....	680	Weiser City.....	2,340
Lake Pend d'Oreille.....	2,003		

FOREIGN AND DOMESTIC CORPORATIONS.

The following is a list of foreign and domestic corporations duly incorporated and doing business in Idaho from June 1, 1887, to September 16, 1889:

Name.	Name.
American Ditch Company.	Mammoth Gold and Silver Mining Company.
Bellevue Water Company.	Mason Creek Ditch Company.
Baker Wire Company.	Moscow Academy.
Bannock Implement Company.	Milwaukee Mining Company.
Burke Water Company.	Moscow Commercial School Company.
Bannock Musical Association.	Middleton Mill Ditch Company.
Bloomington Co-operative Mercantile Institution.	Masonic Hall Association.
Bloomington Irrigation Company.	Nicholia Building and Investment Company.
Caldwell Fair Association.	Nicholia Club.
Canyon Creek Railroad Company.	Nez Perces County Agricultural Fair Association.
Caldwell Building and Loan Association.	Nampa Artesian Well and Water Company.
Cœur d'Alene Prospecting and Mining Company.	Nesmith Consolidated Mining Company.
Cœur d'Alene Water and Mining Company.	Odd Fellows and Knights of Labor Association.
Cedar Hollow and Foot-hills Canal Company.	Oneida Flouring Mills Company.
Cœur d'Alene Railway and Navigation Company.	Oregon Mortgage Company.
Central Canal and Land Company.	Ovid Irrigation Company.
Cedar Point Water Company.	Oneida Merchantile Union.
Caldwell Board of Trade.	Oregon Short Line Railway Company and others (consolidated).
Corbett Slough and Ditch Company.	Parker Mining Company.
Commercial Bank of Moscow.	Presbyterian Church of Rathdrum, first.
Consolidated Silver Bull Mining Company.	Pioneer Dixie Ditch Company.
Deer Creek Irrigating Company.	Pioneer Irrigating and Manufacturing Company.
Eastern Washington Railway Company.	Presbyterian Church of Caldwell, First.
Eastern Washington Railway Company, (supplemental).	Portland Mining Company.
Emerson, Talcott & Co.	Payette and Emmett Ditch Company.
Eureka Mining Company.	Preston, Riverdale, and Mink Creek Canal Company.
E. C. Hardware Company.	Pacific Coast Elevator Company.
Farmers' Commercial Co-operative Association.	Bear Lake Outlet Irrigation Company.
Fay Templeton Mining Company.	Quaker City Mining Company.
Fay Templeton Mining Company (amendment).	Riverside Ditch Company.
First Baptist Church of Moscow.	Rocky Bar and Mountain Home Telegraph and Telephone Company.
First Congregational Church of Pocatello.	Riverside Irrigating Company.
First Congregational Church of Genesee.	Rexburg Milling Company.
Genesee Real Estate Company.	Spokane and Palouse Railway Company.
Gray Rock Mining and Milling Company.	Shoshone Co-operative Company.
Granite Mining Company.	Saint Anthony Canal, Improvement and Town site Company.
Hailey Gold Belt and Western Railway.	Staver & Walker.
Hudson Cattle Company.	Salmon City Cemetery Association.
Hotaling, A. P. & Co.	Spokane, Post Falls and Eastern Railroad and Navigation Company.
Helena and Idaho Gold Mining Company.	Statesman Printing Company.
Ives Silver Mining Company.	Silver City Telegraph Company.
Idaho Mining Company.	Teton Island Canal Company.
Idaho Commercial Company.	Union Ditch Company.
Inez Mining Company.	United Brethren Church of Jamestown.
Idaho County Agricultural Fair Association.	Victor Mining and Milling Company.
Idaho Electric Supply Company.	Veteran Gold Mining Company.
Idaho Canal and Land Company.	Washington and Idaho Railway Company.
Idaho and Montana Gold Mining Company.	Washington and Idaho Railway Company (supplemental).
Idaho Building and Loan Association.	Washington and Idaho Railway Company (supplemental).
Idaho Horse and Cattle Company.	Washington and Idaho Railway Company (supplemental).
Jumbo Gold and Silver Mining Company.	Warring Mining and Milling Company.
J. I. Case Threshing Machine Company.	Wardner Miners' Union.
J. I. Case Threshing Machine Company (amendments).	Washington and Idaho Railway Company (supplemental).
Jarves-Conklin Trust Mortgage Company.	
Ketchum Cemetery Association.	
Ketchum Spring Water Supply Company.	
Kootenai Railway Company.	
Kootenai Transportation Company.	
Lombard Investment Company.	
Lewiston Water Company.	
Latah County Fair Association.	

Fire and life insurance companies.

Name.	Location.
Alta Fire Insurance Company.....	Stockton, Cal.
Ætna Insurance Company.....	Hartford, Conn.
Anglo-Nevada Assurance Corporation.....	California.
California Insurance Company.....	San Francisco, Cal.
Connecticut Fire Insurance Company.....	Hartford, Conn.
Columbia Fire and Marine Insurance Company.....	Portland, Oregon.
Commercial Insurance Company.....	California.
Caledonian Insurance Company.....	Edinburgh, Scotland.
Employés Liability Assurance Corporation.....	London, England.
Fireman's Fund Insurance Company.....	San Francisco, Cal.
German-American.....	New York.
Guardian Assurance Company.....	London, England.
Home Insurance Company.....	New York City, N. Y.
Hartford Fire Insurance Company.....	Hartford, Conn.
Home Mutual Insurance Company.....	California.
Imperial Fire Insurance Company.....	London, England.
Lancashire Insurance Company.....	Manchester, England.
London Assurance Corporation.....	London, England.
Lion Fire Insurance Company.....	Do.
London and Lancashire Fire Insurance Company.....	Liverpool, England.
Mutual Life Insurance Company.....	New York City.
Manchester Fire Assurance Company.....	Manchester, England.
Mutual Reserve Fund Life Association.....	New York City.
North British and Mercantile Insurance Company.....	London and Edinburgh.
Norwich Union.....	Norwich, England.
National Fire Insurance Company.....	Hartford, Conn.
New York Life Insurance Company.....	New York City.
Northwest Fire and Marine Insurance Company.....	Portland Oregon.
Orient Insurance Company.....	Hartford, Conn.
Oregon Fire and Marine Insurance Company.....	Portland, Oregon.
Oakland Home Insurance Company.....	Oakland, Cal.
Phoenix Insurance Company.....	Hartford, Conn.
Pacific Mutual Life Insurance Company.....	California.
Royal Insurance Company.....	Liverpool, England.
Standard Life and Accident Insurance Company.....	Detroit, Mich.
Travelers' Insurance Company (accident).....	Hartford, Conn.
Union Insurance Company.....	San Francisco, Cal.
Williamsburgh City Fire Insurance Company.....	Brooklyn, N. Y.

FEDERAL AND TERRITORIAL OFFICERS IN IDAHO.

Name.	Office.	Name.	Office.
Fred T. Dubois.....	Delegate in Congress.	Francis F. Patterson..	Register land office, Lewiston.
George L. Shoup.....	Governor.	Charles M. Foree.....	Receiver land office, Lewiston.
Edward J. Curtis.....	Secretary.	William J. McClure...	Receiver land office, Cœur d'Alene.
Hugh W. Weir.....	Chief justice supreme court (second district).	Robert E. McFarland..	Register land office, Cœur d'Alene.
John Lee Logan.....	Associate justice (first district).	S. G. Fisher.....	United States Indian agent, Ross Fork Agency.
Charles H. Berry....	Associate justice (third district).	W. D. Robbins.....	United States Indian agent, Nez Percé Agency.
Joseph P. Wilson.....	United States marshal.	J. M. Needham.....	United States Indian agent, Lemhi Agency.
Willis Sweet.....	United States attorney.	H. J. Cole.....	United States Indian agent, Cœur d'Alene Agency.
Joseph C. Straughan..	United States surveyor-general.	W. J. Cunningham....	United States assayer, in charge of assay office, Boise City.
Charles S. Kingsley...	Register land office, Boise City.	William A. Korts....	Sergeant Signal Service, in charge U. S. Signal Office, Boise City.
Joseph Perrault.....	Receiver land office, Boise City.		
H. O. Billings.....	Register land office, Hailey.		
C. O. Stockslager.....	Receiver land office, Hailey.		
Perry J. Anson.....	Register land office, Blackfoot.		
W. H. Danilson.....	Receiver land office, Blackfoot.		

Territorial officers.

Name.	Office.	Name.	Office.
Richard Z. Johnson.....	Attorney-general.	I. N. Coston.....	Directors Idaho Insane Asylum, Blackfoot.
James H. Wickersham.....	Comptroller.	O. P. Johnson.....	
Charles Himrod.....	Treasurer.	N. A. Just.....	
Charles C. Stevenson..	Superintendent of public instruction.	George L. Shoup.....	
Edward J. Curtis.....	Librarian ex-officio.	Isaac H. Bowman.....	
Richard Z. Johnson..	Trustees for care and custody of capitol building.	John W. Jones.....	Regents of the Univer- sity of Idaho.
Charles Himrod.....		J. W. Reid.....	
J. H. Wickersham.....		Nathan Falk.....	
Richard Z. Johnson..		B. F. Morrison.....	
C. W. Moore.....	Commissioners for im- provement of capitol grounds.	Willis Sweet.....	
Peter Sonna.....		H. B. Blake.....	
I. L. Tiner.....		Richard Z. Johnson..	
William Bryon.....	Territorial prison com- missioners.		
C. P. Bilderback.....			
J. B. Wright.....			

Miscellaneous officers.

Name.	Office.	Name.	Office.
John W. Givens.....	Medical superintendent Idaho Insane Asylum.	W. R. Cartwright.....	Janitor capitol building.
J. D. Springer.....	Warden United States penitentiary.	J. W. Daniell.....	Principal city schools, Boisé City.
Walter Shoup.....	Private secretary to gov- ernor.	John J. Curtis.....	Stenographer and assist- ant private secretary to governor.

Army officers, Boisé barracks.

Name.	Office.	Name.	Office.
John Green.....	Lieutenant-colonel com- manding (Second Cav- alry).	Frank B. Andrus.....	Second lieutenant, Co. D, Fourth Infantry.
Alfred C. Girard.....	Surgeon, with rank of major.	Thomas J. Lewis.....	First lieutenant, Co. G, Second Cavalry.
W. O. Webster.....	Captain, Co. D, Fourth Infantry.	R. E. L. Michie.....	Second lieutenant, Co. G, Second Cavalry.

IDAHO NEWSPAPERS.

There are thirty-eight newspapers in Idaho, as follows:

Name of paper.	Place of publication.	Name of paper.	Place of publication.
Free Press.....	Grangeville, Idaho County.	News.....	Blackfoot, Bingham County.
Star.....	Moscow, Latah County.	Herald.....	Pocatello, Bingham County.
Mirror.....	Do.	Enterprise.....	Malad City, Oneida County.
Teller.....	Lewiston, Nez Percé County.	Times.....	Albion, Cassia County.
Stars and Bars..	Lewiston.	Independent...	Paris, Bear Lake County.
Times.....	Cœur d'Alene City, Kootenai County.	Bulletin.....	Rocky Bar, Elmore County.
Sun.....	Murray, Shoshone County.	Progress.....	Nampa, Ada County.
News.....	Wardner, Shoshone County.	Tribune.....	Caldwell, Ada County.
Courier.....	Rathdrum, Kootenai County.	Statesman.....	Boisé City, Ada County.
Messenger.....	Challis, Custer County.	World.....	Idaho City, Boise County.
Citizen.....	Salubria, Washington County.	Avalanche.....	Silver City, Owyhee County.
Leader.....	Weiser, Washington County.	Review.....	Cœur d'Alene City, Shoshone County.
Recorder.....	Salmon City, Lemhi County.	Independent...	Burke, Shoshone County.
Keystone.....	Ketchum, Alturas County.	Free Press....	Wallace, Shoshone County.
News Miner.....	Hailey, Alturas County.	Post.....	Post Falls, Kootenai County.
Times.....	Do.	Republican....	Pocatello, Bingham County.
Press.....	Bellevue, Logan County.	Observer.....	Montpelier, Bear Lake County.
State Journal...	Shoshone, Logan County.	Mail.....	Mountain Home, Elmore County.
Register.....	Eagle Rock, Bingham County.	The Democrat..	Boisé City, Ada County

MORMONISM.

I deem it proper to refer to this question in my report, as it affects fully one-fifth of the population of the Territory. It is safe to estimate that there are over 25,000 people in Idaho who are adherents of the Mormon faith.

Polygamy was one of the original tenets of the Mormon Church organization, and forcibly preached from their pulpits by its leaders.

Polygamy is not at the present time openly practiced in this Territory, but that it is practiced secretly to a limited extent there seems to be no doubt, as indictments are found at nearly every term of court held in the judicial districts having jurisdiction over them, and quite a number have been convicted.

It is charged that plural marriages are now contracted and solemnized in secret in their tabernacles; but as to this charge, whether true or false, I have not the means of obtaining information whereby I can affirm or deny the allegation. It is also alleged that polygamy is still being taught by the leaders of the church. I have ground for believing that there is a division of sentiment, however, now fermenting in the church on this question. Many of the members are beginning to reason and ask themselves why it is that the National, State, and Territorial governments are enacting laws to suppress this practice. Many of them, I believe, are convinced at heart that the intelligence of a great nation like ours, and the laws of our Government, would not be arrayed against this practice if it were not, as stated, contrary to good morals and the sanctity of pure homes. On the other hand, many of the leaders of the church continue to assert that all laws enacted, whether by the National or Territorial governments, for the abolishment of polygamy, and depriving those who preach, teach, and practice bigamy and polygamy, of the right of suffrage, are unconstitutional.

The "test oath," as it is called (to which reference has been made in another part of this report), is being tested as to its validity. It was tried in the supreme court of this Territory, and decided to be valid, from which an appeal was taken to the Supreme Court of the United States, and placed on the calendar of that court. If the act is declared valid by the Supreme Court, it will, in my opinion, be the means of solving the question of polygamy and bigamy, and will, in a short time, be eliminated from their creed.

I can not say too much in commendation of the courts for the faithful and zealous manner in which they have executed the law, at the same time treating the accused with dignity, and tempering their decrees with clemency.

This important question has been before the public for several years, and has been so ably discussed, both in and out of Congress, that I can not hope to present the reasons for more important and stringent legislation for the arrest of polygamy and bigamy more forcibly, or offer better reasons than those given in the many able addresses on this question.

The declaration of rights, adopted by the late constitutional convention of this Territory, article 1, section 4, reads as follows:

The exercise and enjoyment of religious faith and worship shall forever be guaranteed; and no person shall be denied any civil or political right, privilege, or capacity on account of his religious opinions; but the liberty of conscience hereby secured shall not be construed to dispense with oaths or affirmations, or excuse acts of licentiousness, or justify polygamous or other pernicious practices inconsistent with morality or the peace or safety of the State; nor to permit any person, organization, or association to directly or indirectly aid or abet, counsel or advise, any person to commit

the crime of bigamy, polygamy, or any other crime. No person shall be required to attend or support any ministry or place of worship, religious sect or denomination, or pay tithes against his consent; nor shall any preference be given by law to any religious denomination or mode of worship. Bigamy and polygamy are forever prohibited in the State, and the legislature shall provide by law for the punishment of such crimes.

The constitutional convention was composed of able representative men, drawn nearly evenly from the two great political parties, and may be regarded as the voice and sentiment of the people of the Territory, upon the question involved in the application of this law, which is general and in no sense special in its provisions.

STATEHOOD.

On April 2 last my predecessor, Governor Stevenson, issued a proclamation recommending that the people elect delegates to a constitutional convention, to meet at Boise City, the capital of the Territory, on the 4th day of July, 1889, to frame a constitution for the State of Idaho.

On April 30 last I took the oath of office, assuming the duties of the executive department of the Territory May 1. On May 11 I supplemented Governor Stevenson's proclamation, fully indorsing his recommendations for the election of delegates and the formation of a constitution for the State of Idaho.

Seventy-two delegates were elected, as provided in the said proclamation, nearly sixty of whom appeared at the time and place specified, and all but three were present and participated during part of the deliberations.

The convention was in session thirty-four days. Their proceedings were in every way regular.

The constitution framed by the convention aims to protect and foster all the great interests and industries of the Territory, with wise provisions for the protection of the rights of the people. It declares the Constitution of the United States to be the supreme law of the land. Bigamy and polygamy are forever prohibited. In civil cases three-fourths of a jury may render a verdict. The legislature may provide that in misdemeanor five-sixths of the jury may render verdicts.

The government of the State is in three departments: Legislative, executive, and judicial.

The senate consists of 18, and house of representatives of 36 members, and shall never exceed 24 and 60, respectively. Sessions of the legislature to be held biennially.

The executive department to consist of a governor, lieutenant-governor, secretary of state, auditor, treasurer, attorney-general, and superintendent of public instruction, each to hold office for two years.

The governor, secretary of state, and attorney-general constitute a board of pardons. The supreme court to consist of three justices, to be elected at large. Five judicial districts are provided; the judges to reside in and to be elected by the electors of their respective districts. A district attorney shall be elected for each judicial district.

Absolute secrecy of the ballot is guaranteed. Six months' residence is required to become a qualified elector. Taxes for State purposes shall never exceed 10 mills on the dollar. When the assessed value reaches \$50,000,000, 5 mills; at \$100,000,000, not more than 3 mills, with greater reduction as the assessment increases.

Provisions are made for educational, reformatory, and penal institutions. The insane, blind, deaf, and dumb are provided for.

The capital is located at Boise City for twenty years.

All railroads and express companies are declared common carriers, and subject to legislative regulations.

Careful provision is made to prevent confusion or hardship in changing from Territorial to permanent State government.

Schedule and ordinance, section 6, provides for submission of the constitution to a vote of the qualified electors of the Territory on the Tuesday next after the first Monday in November, A. D. 1889.

I have noticed briefly a few of the important provisions of the constitution.

In harmony with the ordinance adopted by the convention fixing the day for the vote to be taken on the constitution, I issued, on October 2, an election proclamation, submitting the constitution for adoption or rejection to a vote of the qualified electors of the Territory, at an election to be held on the 5th day of November next.

I will add that the convention that framed the constitution was in no sense a partisan one. Its members were drawn nearly evenly from both political parties.

It was predicted that if State and county officers, State legislature, and member of Congress were elected at the time of submitting the constitution that 25,000 votes would be cast; but now that the constitution is to be voted on only, it is doubtful if much over half that number of votes will appear.

Idaho claims all essential qualifications necessary to assume the dignity and responsibility of statehood. The steady growth in population and taxable property, and the large increase in productions—the yield of valuable metals nearly doubling during the past year—all these show that Idaho is in the line of progress.

In submitting this, my annual report, I have the honor to say that I am under many obligations to United States, Territorial, and county officials, and to distinguished gentlemen in all parts of the Territory for valuable data. I have worked earnestly to procure reliable information on all subjects treated. If errors exist, they are through oversight or lack of authentic information. Some parts of the Territory, I am sorry to say, are not fully reported, it being impossible to obtain complete data.

With the hope that this report will meet with your approval and be of some value to your Department,

I am, with great respect, your obedient servant,

GEO. L. SHOUP,
Governor.

Hon. JOHN W. NOBLE,
Secretary of the Interior, Washington, D. C.

APPENDICES.

APPENDIX A.

A CONVENTION TO FORM A CONSTITUTION FOR THE STATE OF IDAHO.

Proclamation of Governor E. A. Stevenson.

EXECUTIVE DEPARTMENT,
Boisé City, Idaho, April 2, 1889.

Whereas it is desirable that the Territory of Idaho be admitted into the Union as a State, and it has been clearly indicated by leading men of Congress of both political parties that so soon as a suitable constitution is presented to Congress such admission will be granted:

Now, therefore, I, E. A. Stevenson, governor of Idaho Territory, fully recognizing the great advantages which statehood will confer, and in accordance with the fully expressed wishes of the citizens of the Territory, do issue this, my proclamation, to the people thereof, and recommend to them that they take the necessary steps for such admission; that for this purpose they hold throughout this Territory, on the first Monday in June, A. D. 1889, an election for delegates to a constitutional convention to convene at Boisé City, in said Territory, at 12 o'clock noon, of the 4th day of July, A. D. 1889, for the purpose of framing a constitution for the State of Idaho; that such constitution, when so framed, be submitted for its adoption or rejection to a vote of the people at an election to be held throughout this Territory at a time hereafter to be provided for; and if adopted by the people at such election, to be then submitted to Congress for ratification, and the admission of this Territory as a State of the Union; that the qualification of delegates to such convention shall be such as are now required by the laws of said Territory for members of the legislative assembly of said Territory, and such delegates must take the same oath of office required of such members; that the election provided for shall be conducted, the returns made, the results ascertained, certificates to persons elected be issued, and the qualifications for voters thereof shall be the same as now provided by the laws of said Territory for general elections therein; that said constitutional convention shall be composed of seventy-two members, apportioned as follows, to wit:

Ada County, 9; Alturas, 6; Bear Lake, 1; Bingham, 7; Boisé, 3; Cassia, 2; Custer, 4; Lemhi, 3; Idaho, 3; Latah, 6; Kootenai, 3; Nez Percé, 3; Oneida, 2; Owyhee, 3; Shoshone, 8; Washington, 3; Logan, 3; Elmore, 3.

Done at Boisé City, the capital of the Territory of Idaho, this 2d day of April, A. D. 1889.

E. A. STEVENSON,
Governor.

Attest: E. J. CURTIS,
[SEAL.] *Secretary.*

APPENDIX B.

ADVANTAGES OF STATEHOOD FOR IDAHO—CONSTITUTIONAL CONVENTION.

Proclamation by Governor George L. Shoup.

Whereas the people of Idaho are now living under a form of Territorial government little better than a colonial system under foreign rule, whereby they are debarred from participating in any election for President and Vice-President of the United States, have no vote in either house of Congress, and have no voice in the selection of the most important officers of the Territory, executive or judicial; and

Whereas the people of Idaho are desirous of exercising the rights and privileges guaranteed to a free and loyal people under the Constitution of the United States, and to organize a State government preparatory to admission to the Federal Union, believing that they have sufficient population and wealth to justify such an undertaking; and

Whereas Governor E. A. Stevenson did, on April 2, 1889, issue a proclamation calling for an election of delegates to a constitutional convention to be held in Boise City, Idaho, on July 4, 1889, to make a constitution for the State of Idaho, to be submitted to the people for adoption or rejection:

Now, therefore, I, George L. Shoup, governor of Idaho, fully recognizing the advantages that statehood possesses over our present system of Territorial government, do issue this, my proclamation, recommending that delegates be elected to said constitutional convention on the first Monday in June, as proclaimed in said call issued by Governor Stevenson. If for any reason the citizens of any county prefer to elect their delegates by some other equitable method, I am satisfied that the delegates so chosen will be recognized and admitted to seats in the convention. The manner of choosing delegates is of less importance than that they should be representative men, of character and ability, whose work will be satisfactory to Congress and the people.

Objection to statehood has been made by a few of our citizens on the ground that the cost of government will be greatly increased. There is this much of truth in the objection, that a State government sufficient in all its departments for the needs of a growing commonwealth, affording means for the prompt administration of justice in the courts, providing a teacher for every child of school age, and an asylum for every helpless, blind, dumb, or idiotic dependent, will cost more money than a government which delays justice, turns out the feeble to the charities of the world, and rears the young in ignorance. But every good thing is worth its cost, and no people ever bore just burdens with greater patience than the people of Idaho.

A brief statement of facts in connection with this question will be useful for reference. The General Government now pays for the salaries of the governor and secretary and certain other contingent expenses, including rent, \$6,000 per year; for salaries of judges, \$9,000; and for biennial expenses of the general assembly, including printing the laws and journals, \$26,000. Reducing the latter item to an annual expense, we find the General Government paying for the support of Idaho the sum of \$28,000 per year. The other Territorial expenses, met by our own tax-payers, average annually the sum of \$75,000.

The Territory now pays in full the salaries of the following officers, to wit:

Attorney-general, comptroller, treasurer, superintendent of public instruction, employés of capitol building, directors and attachés of insane asylum, prison commissioners, librarian, a portion of the attachés of the legislative assembly, incidental expenses attendant on the same; and to each county attorney in the Territory \$300 per annum.

I note these facts, as it is supposed by many that some of the above-named officers are now paid by the General Government.

As moderate as our tax rate now is, it is gradually reducing our Territorial indebtedness. This is made apparent by the fact that the balance in the Territorial treasury on February 9, 1888, paid all outstanding warrants up to October 10, 1887, while the money in the treasury February 9, 1889, paid all outstanding warrants up to December 31, 1888. In other words, the collections for the year ending February 9, 1889, paid the expenses of one year, two months, and twenty days.

The insignificance of the amount contributed by the General Government becomes more apparent if we include the amount paid by our citizens for county expenses. The amount stands:

Annual county expenses	\$450, 000
Annual Territorial expenses	103, 000
Total	553, 000
This sum is paid as follows:	
By the people of Idaho	525, 000
By the United States Government	28, 000
Total	553, 000

Referring again to the increased cost of the State government and admitting that there will be a moderate necessary increase of expenditure, attention is called to the generosity with which a great nation comes to the help of a young commonwealth. The magnificent dowry promised by Congress far outweighs all the direct loss of revenue from the Federal Treasury and all the reasonable increase of cost of State

government. Under the bills unanimously reported by the committees of both houses of Congress gifts to the proposed State of Idaho were provided as follows:

Grants:	Acres.
School sections 16 and 36	2,840,000
University grant	46,080
Penitentiary lands	160
Agricultural college lands	90,000
Scientific school lands	100,000
Normal school lands	100,000
Charitable institutions	300,000
Public buildings	32,000
Total	3,508,240

Deducting from this the lava bed and mountain lands which would naturally fall to our share, there would still remain 3,000,000 acres of timber, plain and meadow lands, to the credit of statehood. If it were wise public policy to sell these lands at once in open market at their present value, we should enter upon statehood with the richest treasury west of the Mississippi.

Look at this grant in detail. When these school lands shall have been sold in accordance with existing laws, our school taxes will be reduced to an inconsiderable rate. We have incorporated a Territorial university and levied a special tax for its support; when the university grant is placed upon the market it is probable that this tax can be entirely remitted. Three other excellent educational institutions can be based upon the grants for agricultural, scientific, and normal schools. We are paying \$20,000 annually for the support of an insane asylum; ultimately the Congressional grant may take this entirely off our hands. We are confronted with a debt on our capitol building of \$80,000; the Congressional grant ought to pay every dollar of it. We are paying \$20,000 per year for support of Territorial prisoners—a sum which not only provides for our own prisoners, but for those of the United States as well. Congress proposes to spend \$25,000 more on this prison, give us the entire property, and then pay us for boarding Federal convicts.

Out of a similar grant the State of Nevada has already realized \$1,500,000, and yet has most of its lands unsold. The annual receipts now by the State of Nevada from the current sales of these lands is an amount equal to nearly double the present cost of supporting our entire Territorial government.

The lands included in the various grants to the State of Idaho are now worth not less than \$3,750,000. Only 6 per cent. annual interest on this sum is \$225,000—three times our present Territorial income.

In addition to the foregoing grants of lands the State of Idaho will receive for school purposes 5 per cent. of net proceeds of all public lands sold within the State by the General Government—a magnificent sum of itself.

The assessment of real and personal property in the Territory has increased since 1878 at the rate of about \$1,600,000 per annum. The increase of assessable property would be much more rapid under State government. I refer to this as an evidence that taxation need not be increased above the present levy to meet all the requirements of State government.

One of the most serious hinderances to the progress of our Territory is what is known as the alien act of Congress, which is an effectual prohibition of the investment of foreign capital. An ineffectual attempt was made during the last Congress to repeal or modify this law, so that our people might be in some measure benefited by the large amount of money held by this class of capitalists, who are ready and anxious to invest large sums in the purchase and development of our mines. If Idaho shall become a State, this hinderance to our prosperity is at once removed, as this law only applies to Territories over which Congress has exclusive control.

Whether statehood will bring even a temporary increase of taxation depends largely upon the judicious action of the constitutional convention. Into the details of their great work I can not enter. It is for you to instruct your representatives in the principles of economy.

The convention will undoubtedly fix its own per diem and mileage and that of its employés. Their certificates of service and expenditure will be filed with the Territorial secretary, and Congress will doubtless follow its own precedents in providing for the payment thereof.

In testimony whereof I have hereunto set my hand and caused to be affixed the great seal of the Territory. Done at Boise City, the capital of Idaho, this eleventh day of May, in the year of our Lord one thousand eight hundred and eighty-nine, and of the independence of the United States of America the one hundred and thirteenth.

[SEAL.]

GEORGE L. SHOUP.

By the governor:

EDWARD J. CURTIS,

Secretary of Idaho.

APPENDIX C.

CALL FOR AN ELECTION FOR THE ADOPTION OR REJECTION OF A CONSTITUTION.

Proclamation of Gov. George L. Shoup.

Whereas on the 2d day of April, Hon. E. A. Stevenson, governor of Idaho, issued a proclamation to the people of the Territory, recommending them to take the necessary steps, preliminary to asking for admission into the Union as a State, recommending at the same time that seventy-two delegates be elected to a constitutional convention to convene in Boise City, the capital of the Territory, at 12 o'clock (noon) July 4, 1889; and

Whereas the people of the Territory did elect, as provided in Governor Stevenson's proclamation, seventy-two delegates, a majority of whom assembled at the time and place designated in said proclamation; and

Whereas the said constitutional convention, after perfecting its organization, at once proceeded in a dignified and lawful manner, in the construction and formation of a constitution for the State of Idaho, and providing therein for the submission of said constitution for its ratification or rejection on Tuesday, the 5th day of November next.

Now, therefore, I, George L. Shoup, governor of the Territory of Idaho, recognizing the wish of the people as expressed by their representatives in convention, do proclaim that an election will be held on Tuesday, the 5th day of November, 1889, for the adoption or rejection of the constitution for the State of Idaho; said election to be conducted in all respects in the same manner as provided by law for general elections; and the returns to be made and canvassed as provided in cases of general elections, and abstracts of such returns duly certified, to be transmitted to the board of canvassers, now provided by law for canvassing the returns of votes for Delegate to Congress, as set forth in section 6, Schedule and Ordinance, page 33 of the constitution.

I earnestly recommend to the honorable board of commissioners of each county in the Territory that they will provide for conducting the election as contemplated by the constitution.

I respectfully urge every elector in the Territory to read the constitution carefully and without prejudice, and on election day let every legal voter, irrespective of party, cast his ballot conscientiously for or against the constitution.

The convention was composed of talented and conscientious men, representing all the leading professions and industries, who worked faithfully, zealously, and energetically for thirty-four days.

The result of their arduous labor is a constitution which commends itself to the people. You will bear in mind that there has, never will be, nor is it in the power of men to frame, a constitution that will meet the views of all. The framers of the constitution fully realizing this fact, labored earnestly to harmonize all conflicting interests. If twenty conventions were held it is not probable one of them would frame a constitution with as few defects as the one now submitted for your examination, and upon which you are to vote.

If from any cause it shall be found necessary hereafter to alter or amend the constitution, ample provision for such change is made therein.

I have only to add in conclusion that every resource and interest of the Territory, under its present aspect, were fully, ably, and impartially considered by a body of experienced gentlemen, even and equally drawn from the various sections of the Territory, and from each of the two great political party organizations.

It is hardly to be presumed that the intelligent citizens of the Territory, who are called upon to examine and pass on this constitution, whether farmers, mechanics, laborers, miners, stock-growers, merchants, or those engaged in and representing other interests and vocations, after such examination, will oppose the adoption of it upon mere technical grounds. There is a higher consideration to be given to the merit it contains and the advantages of statehood which it seeks to achieve.

Looking, therefore, to the constitution as perfected by the convention referred to, I can not but believe that its adoption by the voters of the Territory on the 5th day of November by the largest legal vote that can be brought out at the polls will prove the most influential act towards securing the admission of Idaho as one of the States of this Union, thereby realizing to the people the blessings of statehood, which must inevitably give new life to our development and rapidly advance the material interests of our commonwealth.

In testimony whereof I have hereunto set my hand and caused to be affixed the great seal of the Territory. Done at the city of Boise, the capital of Idaho, this 2d day of October, in the year of our Lord one thousand eight hundred and eighty-nine, and of the independence of the United States of America the one hundred and fourteenth.

[SEAL.]

GEORGE L. SHOUP.

By the governor:

E. J. CURTIS, *Secretary of Idaho.*

R E P O R T
OF
THE GOVERNOR OF MONTANA.

TERRITORY OF MONTANA, EXECUTIVE OFFICE,
Helena, October 22, 1889.

SIR: Complying with your request of July 19, I have the honor to submit the following concerning the progress and condition of Montana Territory during the past fiscal year, together with such suggestions as have commended themselves to my judgment:

POPULATION.

No census of the population of the Territory having been taken since 1880, it can only be estimated from such sources of information as are usually relied upon in such cases.

The census of 1880 showed the population of the Territory to be 39,159. Since that year there has been a constant influx of immigration; and while the counties of Lewis and Clarke, Deer Lodge, and Missoula show the most pronounced increase, yet every portion of the Territory has perceptibly felt its influence. The total vote of the Territory for Delegate to Congress in November, 1888, was 40,014; basing an estimate of the total population upon this vote, and allowing one vote for every four inhabitants, would give us a total population of 160,056. To this should be added the Indian population of the Territory, which is estimated at 15,000, and also the immigration into the Territory for the year 1889, which is officially given by the railroad companies at 10,250, making a total of 185,306 on the 30th day of June, 1889.

This, in my opinion, is a very conservative figure, and I am fully convinced that the census of 1890 will show a population of considerably more than 200,000 souls.

TAXABLE PROPERTY.

The rapid increase in population brings with it a proportionate increase in taxable property. With a tax levy of only 2 mills on the dollar for Territorial purposes, the Territory has been enabled to meet all its current expenses in cash and to maintain a surplus in the treasury sufficient to meet all contingencies.

The report of the Territorial treasurer at close of business on June 30, 1889, showed a cash balance in the treasury of \$ 88,265.67, with not a dollar of outstanding warrants unpaid.

The following is a statement of the total assessment of the Territory for the years named, and gives a clear illustration of the steady and substantial growth experienced since 1880:

1880.....	\$18,609,802.00	1885.....	\$52,847,536.40
1881.....	24,040,806.30	1886.....	55,076,871.53
1882.....	33,211,319.12	1887.....	60,099,493.70
1883.....	44,698,461.28	1888.....	67,430,533.70
1884.....	49,746,286.91		

In connection with this statement it must be remembered that property is not taxed at over 60 per cent. of its value, and that our mines, which constitute the largest productive industry and represent millions of dollars of market value, only pay a tax on their net output and surface value at Government price, and the value of mills and other improvements erected thereon.

Taking this into consideration, and placing other property at its true value, the total wealth of Montana to-day may safely be placed at the magnificent figure of \$150,000,000, a showing that can not be equaled by the same number of people elsewhere on the face of the globe. As herein referred to the Territory has no indebtedness whatsoever. The aggregated indebtedness of her sixteen counties is \$1,500,000, mostly incurred in the erection of court-houses and other buildings, and in constructing roads and bridges.

Only one county in the Territory has ever made default in the payment of interest on its bonded debt, and that county is now numbered among the most prosperous in the Territory, amply able and promptly meeting all its liabilities, and its financial standing is as good as that of any county in the Territory.

SETTLEMENT OF LANDS.

The records of the several land offices in the Territory show the total number of acres of public lands settled upon in the past fiscal year to be 452,428.04 acres. This includes mineral lands, 5,169 acres, and coal lands, 12,889 acres, the balance being principally homestead, desert, and pre-emption entries.

COMMERCE AND PROGRESS OF RAILROAD ENTERPRISES.

No accurate statistics are obtainable showing total imports and exports for the past fiscal year. The official reports of the Union Pacific and the Northern Pacific Railroads for the year 1888 give the tonnage as follows for that year:

	Imports.	Exports.
	<i>Tons.</i>	<i>Tons.</i>
Over Northern Pacific Railroad	132,696	100,181
Over Union Pacific Railroad.....	55,833	47,990
Total	188,529	148,171

These figures do not include the local business, such as the handling of ores, coal, lumber, merchandise, etc., which in number of tons far exceeds the through business to and from eastern points. The St. Paul, Minneapolis and Manitoba and the Montana Central Railroads, running from St. Paul to Butte City, were not completed until late in the year 1888, and no report of the tonnage over those roads was made, but several thousand tons were by these roads transported into the Territory and a large number of cattle and horses carried out, which should be added to the tonnage given over the other roads.

The tonnage via the Missouri River in 1888 amounted to 4,000 tons, consisting mainly of supplies for Government forts and Indian agencies; and the outgoing of wool, hides, and furs amounted to 2,000,000 pounds.

There are now three transcontinental lines of railroads within the Territory, all apparently doing a large and profitable business. Besides these there are numerous short branches or feeders, reaching out to mining camps and agricultural valleys, all doing a large local business, and which add largely to the tonnage of the main lines.

Following is a complete list of completed railroads in the Territory, up to December 31, 1888, with their mileage:

	Miles.
Union Pacific, Pleasant Valley to Butte	140
Montana Union, Silver Bow to Garrison	44
Montana Central and branches	193.7
St. Paul, Minneapolis and Manitoba in Montana	408
Northern Pacific in Montana:	
Main line	781.9
Branches	217.3
Total	1,784.9

There are also under construction and projected as follows:

	Miles.
Niehart Branch of Montana Central	50
Northern Pacific and Montana, Gallatin to Butte	70.5
Elk Horn Branch of Northern Pacific Railroad	20.5
Missoula to Idaho boundary, by Northern Pacific Railroad	110
Northern Pacific Railroad, branch to granite quarry near Helena	2
Sappington to Red Bluff	20.5
Harrison to Poney	10
Total	283.5

Roads surveyed but not yet commenced.

	Miles.
Manitoba Extension, Great Falls to Missoula	125
Oregon Railway and Navigation, in Montana, Idaho boundary to Missoula	115
Northern Pacific Railroad:	
Billings to Fort Benton	200
Branch to Castle Mountain	65
Big Horn and Southern	115
Billings and Clark's Fork	60
Garrison to Missoula	80
Missoula to Idaho boundary	110
Total	870

It is the intention of the several companies to build the above-named lines next year. The routes have all been surveyed or thoroughly explored, and everything appears in readiness for active work all along the line.

No statistics are to be had giving exact value of exports; yet, through the railroad and express companies, cattle and sheep organizations, mining companies' reports, and other equally reliable sources, it can be estimated very closely, and is given as follows as a very conservative estimate for the past twelve months:

Gold and silver	\$24,000,000
Copper	12,000,000
Lead	1,000,000
Beef cattle and horses	5,000,000
Sheep for market	1,000,000
Wool	2,350,000
Hides, pelts, etc	400,000
Total	45,750,000

AGRICULTURE.

The fame of Montana's mines and stock-ranges has thrown a shadow over its agricultural resources. To those unacquainted with the country the name "Montana" calls up an image of great mountain ranges, seamed with veins of precious metals and rough, broken stock-ranges, dotted with droves of cattle and flocks of sheep. But, while there is some truth in such an idea, it is by no means all the truth. Between these mountain ranges lie many great and small valleys, equaling in fertility the famous valley of the Nile, and a very large portion of what is now an almost unbroken stock-range consists of rolling table lands eminently adapted to grain-raising.

It is a low estimate to say that two-fifths of the area of Montana is fitted for cultivation. This makes 36,000,000 acres. Of this vast area only about 4,000,000 acres are returned for taxation, inclusive of surveyed railroads, showing that eight-ninths of the cultivable area of Montana are still unoccupied lands.

Montana is still so new that very accurate statistics are not obtainable; but I give a few figures from the best available sources.

	Acres.
Area of Montana	91,000,000
Area of cultivable lands (estimated)	36,000,000
Lands on which crops were raised in 1888	331,382
Lands assessed for taxation in 1888	3,741,459
Number of farms in 1888	4,882

On 26,155 acres were raised 770,200 bushels of wheat.

On 84,978 acres were raised 3,026,572 bushels of oats.

These figures show that the agriculture of Montana is still in its infancy. Over one-half of the total amount of grain produced is raised in two valleys, those of the Gallatin and Bitter Root. Nineteen-twentieths of the total amount is raised in the western or mountainous third of the State. This is due to several reasons. The mines have afforded the best local market, and therefore those valleys lying contiguous to the mining regions are most thickly populated and have been settled longer than those counties lying east of the mountains. The mountain valleys are most easily irrigated.

How far those 32,000,000 acres now vacant will be brought under cultivation depends almost altogether on the water question. There are some sections of Montana where crops may be raised successfully without irrigation. This is especially the case with the fertile bench-lands lying along the foot of the mountain ranges, where the snow lies deep in winter, and where sufficient moisture is stored away in the soil to mature magnificent crops of winter wheat, rye, and barley, even in such exceptionally dry seasons as the present one. In some of the northern valleys also the soil may be sufficiently moist to warrant cultivation without irrigation. But in spite of these exceptions the fact remains that over by far the greater portion of Montana the question of the amount of land which may be utilized for farming depends solely on the quantity of water available for irrigation.

Montana is by far the best watered of any of the Rocky Mountain States and Territories. Clark's Fork of the Columbia drains that portion of it lying on the Pacific slope, and so abundant are the streams of that section that I believe there can be no question that there is sufficient water, when properly utilized, to water every foot of tillable land in that section. East of the Rocky Mountains the Missouri and Yellowstone Rivers, with their various tributaries, lie almost entirely within

the boundaries of Montana from their sources in the high mountains to their junction on our eastern border.

In our mountain valleys the fall of the streams is so great that it has been comparatively easy to utilize their waters for irrigation. No large canals were needed where the natural slope of the ground was from 25 to 100 feet per mile. Each farmer tapped the stream with his own ditch, and in that way nearly all of our present farms are cultivated. This, however, is an exceedingly wasteful system, and it has been carried about as far as it can be done by the individual farmer. Corporate enterprise is now beginning to take out large canals from some of the larger streams, selling the water to the farmer; but the main streams are hardly touched as yet, and yet the surveys, now being prosecuted, will show conclusively that the fall of both the Yellowstone and the Missouri is sufficiently great, and the elevation of the contiguous fertile table-lands sufficiently low to make every drop of water in those streams available for irrigation.

I can not here go into details, and the report of the Senate Irrigation Committee will probably make it needless that I should do so; but I can not but emphasize the urgency of the adoption of a comprehensive scheme of irrigation of the now waste lands of Montana.

A storage system as well as a system of large canals will be necessary. Almost all of our streams run, in their course through the mountains, through a series of lakes or old lake-basins, now drained, separated by narrow cañons, offering admirable natural sites for reservoirs and dams. By storing the flood-waters of the streams here an abundance of water would be had for the irrigation of all the upper valleys, and even though all of the water be taken from the stream-beds for this purpose, the seepage from the irrigated lands would soon again fill the river-beds for use over and over again in the lower valleys.

But such works are altogether too great for private enterprise, and to carry them out control over the water supply, as well as control over the now unoccupied lands, is necessary. It will necessarily require co-operation between the General Government and the State, and as many of the private canal enterprises now being undertaken would conflict with a more comprehensive system, it is important that such a scheme should be mapped out as soon as possible and immediate steps taken to carry it into effect.

Although the problem of irrigation is a new one to the Anglo-Saxon race, and although the Montana farmer has had to teach himself the very a b c of this science by hard experience, the results are already magnificent.

On well-irrigated farms crops of 40 to 60 bushels of wheat and 80 to 100 bushels of oats per acre are common, and where water was abundant even this exceptionally dry season has had no effect in diminishing the crops. When the traveler over the sun-scorched plains of western Dakota and the Lower Yellowstone during the past summer entered the Gallatin Valley and saw richer crops of grain and hay than any in Illinois and Kansas, and then realized that not one drop of rain had moistened those crops, he was taught by an object lesson the value of irrigation, as nothing else could teach it, and yet there are to-day many millions of acres in Montana only waiting for the fructifying application of those great streams of water, which are now running to waste, to produce crops equal to those of any lands in the world. The land is there, the water is there. While they are kept separate, Montana can not feed her present population. Bring them together and you add another great grain-producing State to the Union.

STOCK RAISING.

While our stock interests are the present season seriously threatened by a drought, unprecedented in the history of the Territory or of the West, they are and always will remain one of the leading and most important interests of the Territory.

The wonderful nutrition of our native grasses, in connection with our salubrious climate, has given Montana a reputation all over the world as the leading stock-growing section of the West, and which, by reason of superior advantages, it will always maintain, and its size and importance continue to increase; but in the future the farm of the valley will supplement the pasture of the hills and plains, and the value and usefulness of both be enhanced. The class of animals raised on our mountain ranges are unsurpassed. Long observation has shown beyond question that different types of animals are produced by the continued operation of climatic influences. In low-lying countries, where the soil is wet, the atmosphere heavy with moisture, and the growth of vegetation rapid, coarse and rank animals are produced of large frame, with loose, soft, and flabby muscles, poor, flat feet, and weak lung power. On the other hand, the opposite climatic considerations conduce to produce a type of animals exactly opposite to that described, of compact build, with fine, clean bones, muscles of iron, great lung power, and constitutions that withstand the greatest strain; and such will be the character of animals raised in Montana. Already has this been demonstrated upon the turf, and we have only fairly commenced to show up the quality of our finely bred stock.

The assessors of the different counties in the Territory are required by law to return the number of cattle, horses, and sheep in their respective counties; but so carelessly has this been done that the statistics at hand are at best only a guide by which to arrive at the facts.

The following figures, taken from the records in the Territorial auditor's office, show the number of animals reported by the assessors of the Territory for the years named, which, though far short of the true number, show perhaps a fair basis upon which to estimate the annual increase in this branch of industry.

Year.	Horses.	Cattle.	Sheep.
1883	89,311	376,811	465,667
1884	99,843	509,768	593,896
1885	114,925	613,882	798,682
1886	127,784	663,716	968,298
1887	136,978	471,171	1,062,141
1888	142,040	488,467	1,153,771

The decrease in the number of cattle in 1887 was due to the heavy losses incurred the previous winter by reason of the very severe weather and short grass. As before remarked, these figures only serve as guides in estimating the actual numbers of the different classes of animals. I estimate, from the most reliable sources obtainable, as follows:

Total number of cattle	1,250,000
Total number of horses	220,000
Total number of sheep	2,150,000

Sheep are increasing more rapidly than any other branch of the stock interests, and are found very profitable to those engaged in the business. The wool product of 1889 is conservatively estimated at 12,000,000

pounds, and the quality is unsurpassed. At Fort Benton and Great Falls this season several large clips were sold on the ground at 23 to 24 cents per pound, just as it came from the backs of the sheep; and this, it must be remembered, at a point nearly 3,000 miles from market.

Our sheep men are much interested in the question of tariff upon wool; for, with the long and expensive haul by railroad to a market, together with the high rates paid for labor and supplies, they feel that with free wool they could not compete with the prices of the foreign article, and would of necessity be driven from the field of competition.

MINING.

The chief source of Territorial wealth is mining. Montana has been a mining Territory since its organization, and has produced upwards of \$200,000,000 since its settlement a quarter of a century ago. The entire mountainous portion of the Territory, embracing over one-third of its surface, is rich in minerals, and in no similar area upon the face of the globe are so many mines in process of successful operation.

The declared dividends of the incorporated mining companies for the current year, estimated upon the amount reported paid for the first nine months, will aggregate \$4,000,000, while the properties owned by individuals and close corporations will easily double the amount. The ores are silver, lead, gold, and copper. The principal mines so far developed are in the counties of Silver Bow, Deer Lodge, Lewis and Clarke, Beaver Head, and Madison, but in all portions of the Territory, except the extreme east, prospecting is actively progressing, and valuable discoveries are reported almost daily. There are in operation in the Territory 10 gold-mills, 18 silver-mills, 7 lead-smelters, 8 copper-smelters, and about 25 concentrators, the combined capacity of which is not less than 5,000 tons per day.

When the new Anaconda smelter shall be completed the total will be fully 7,000 tons. In the extraction and reduction of this ore it is conservatively estimated that ten thousand men are directly employed, while fully seventy-five thousand people are indirectly supported by mining and its cognate industries. The principal mining city is Butte, a well conducted and exceedingly prosperous place of 30,000 people, which is wholly dependent upon mining. Here are located the great copper and silver mines of Montana, whose production has increased from \$1,000,000 in 1880 to \$23,000,000 in 1888. This year the output will be greater in weight, but its value will be less, owing to the depreciation in the price of copper. The total copper product of the district for 1889 will reach 120,000,000 pounds, worth, at 10 cents per pound, \$12,000,000. The silver product of the camp, from the great quartz mills there, will aggregate \$6,000,000. The mines seem to be practically inexhaustible. The other great mining camps of the Territory are Phillipsburgh, where the great Granite Mountain silver mine, paying a monthly dividend of \$200,000, is located, and Marysville, where the Drum Lummond, a gold mine paying a quarterly dividend of \$100,000, is located.

Many other great bonanzas paying immense profits, and thousands of smaller properties in an active state of development in numerous mining districts, might be enumerated. Let it suffice, however, to say that the achieved results of mining in Montana are a source of pride to all her people, and that the outlook is bright with promise for long-continued activity on a grand scale.

A year ago Montana had outstripped all her sisters in the race for precedence in the value of her base and precious metal output.

To realize the full fruition of her hopes, and to compensate justly the hardy pioneers who have builded up a magnificent commonwealth from the wilderness, but two things are needed:

These are the free coinage of silver by the Government, thus enlarging the demand for that metal and increasing its value, as well as supplying a circulating medium needed by the people of the country, and, second, the collection of the full duty on all lead ores imported from Mexico, whether in association with silver or not. The lead producers of Montana confidently rely upon this Administration and upon Congress to afford the necessary relief in this matter, that an important American industry may be protected and the wages of American miners maintained. Montana produced 12,000 tons of lead this year, but has been able to do so at a profit only under the stimulus of the high price consequent upon the assurance of a ruling of the Treasury Department favorable to American producers. With the existing disparity in the price of labor Montana can not compete with Mexico in the production of lead, and we appeal to Congress for that protection accorded other branches of American industry. If granted, our lead production will continue to increase and become one of our prominent and leading industries; otherwise our lead smelters must close and lead mining be abandoned.

FORESTS AND TIMBER SUPPLY.

The area of timber lands in Montana is variously estimated at from 35,000 to 40,000 square miles.

In answer to the circular of the Interior Department for 1883, Mr. W. F. Wheeler, as the result of extended travel and observation in the Territory, gave his estimate at 40 000 square miles. Mr. Coleman, late Commissioner of Agriculture, in his later report, from the best information he could obtain from various sources, placed it at 34,375 square miles. The truth probably lies between the two estimates, but can not be definitely determined until the timber lands of the Territory have been surveyed.

The distribution of timber is almost exclusively confined to the great Rocky Mountain Range and its spurs, and to detached clusters of mountains. Nearly all of the Territory west of the Rocky Mountains is mountainous, and here is the greatest and most valuable body of timber. In size and appearance the trees partake of the Washington Territory and Oregon type, while trees in the eastern portion of the Territory resemble in appearance and growth those of the Atlantic coast.

Timber does not grow in the valleys or on the bench lands, but, along the margin of all the streams, there usually grows a narrow fringe of poplar, cotton-wood, quaking asp, alder, and willow. These are unfit for lumber, but are used for fencing, log houses, and barns.

Railroads now traverse nearly every principal valley and transport lumber from the timbered districts, for consumption in the different cities, towns, and mining camps, where it is sold at reasonable prices. The smelting furnaces and quartz mills use a large amount of wood for fuel, and, in the shape of charcoal, for smelting purposes, but they are now rapidly getting to use the excellent quality of coal and coke being mined and manufactured in the Territory, and will soon cease to use wood and charcoal altogether.

The greatest destruction of timber is in the forest fires, which occur, to some extent, every year. During the past summer more timber has been destroyed by fire in Montana than could have been used by our entire population in a generation. During the summer the weather

was exceedingly hot and dry. Little or no rain fell from the middle of April up to the middle of September. Tourists, teamsters, hunters, Indians, prospectors, and others were careless about putting out camp fires, and after leaving them burning the wind would set the leaves and dry grass on fire around them, which would extend to the timber, and continue burning until the fuel was exhausted or the fires extinguished by rains or snow in September. Our Territorial laws provide for the punishment of those who set out or cause these fires, if detected; but detection is almost impossible, because there is no particular person or officer appointed to watch for fires, and no sufficient pay provided.

Reliable statistics are not to be had which would show the value of lumber produced in the Territory. According to the reports of the several county assessors for the year 1888 there were that year ninety-eight saw-mills in operation in the Territory, and their product amounted to 67,474,575 feet of lumber. But this is no doubt far short of the actual figures. I estimate, from the most reliable information at hand, that there were produced during the past twelve months 150,000,000 feet of sawed lumber in the Territory, all of which was consumed within our own borders. This, valued at \$15 per thousand, would be worth \$22,500,000.

The introduction and use of wire for fencing by our farmers and stockmen will save us vast amounts of timber each year, which otherwise would be used for that purpose.

The railroads use coal exclusively for fuel, of which there is an abundant supply, so that the great consumption of timber is for building and mining purposes, and there is no danger but that the supply is ample to meet the wants of generations to come. Yet these facts should be no reason for any wanton waste of our fine forest resources.

SCHOOLS.

Since 1872 a system of public free schools, under a law briefly adapted from that of California, has been in force, and unvaryingly sustained with increased liberality. The county tax has been the only source of revenue for support, and a direct district tax to build school-houses; yet our schools have steadily grown in favor and usefulness. Attendance, considering the large area of some of our districts, has always been good, and, though we have a mildly-compulsory law, its application has never had to be invoked.

All of our larger cities and towns have substantial, commodious, and well-furnished school-houses, and, considering that we have no normal schools, we have always had an excellent class of teachers, mostly trained in other States, but not a few in our own high-schools.

A majority of the teachers are ladies, but it is difficult to meet the demand for them, they are so rapidly transferred to the charge of independent households of their own after arriving here. With increased means derived from the magnificent dowry of school lands donated us by the General Government, more compact settlements, and training-schools for our teachers, we may reasonably expect to make much greater advance in the future than in the past.

SCHOOL LANDS.

If Montana is admitted as a State in the Union in November next, as now seems certain, the school lands donated by the General Govern-

ment will at once become available for school purposes, and the income to be derived therefrom will materially assist in the support and advancement of our school system.

By the term of our enabling act Congress has provided that none of these lands shall be sold for a price less than \$10 per acre, and has further provided that they shall not be leased for a longer term than five years. It will be many years before the greater portion of our school lands will be marketable at the price named, and the short term for which they can be leased will largely preclude the possibility of any extensive system of leasing, as few will care to go to the expense of permanent improvements, such as would be required in order to have the exclusive benefit of them during the leasing period, for so short a time. I would recommend that the provision in relation to the leasing of these lands be so modified as to leave the State free to act as it may deem for the best interest of the people in this regard.

The following statistics are appended as showing the growth of our school system during the past ten years:

	1878.	1888.
Number of school-houses	80	316
Value of same	\$67,700	\$646,670
Number of school children.....	4,704	27,600
Number of teachers employed.....	104	442
Amount of county tax.....	\$47,323	\$317,442.37

LABOR SUPPLY, WAGES, ETC.

It can be said truthfully that Montana is almost a paradise for laboring men and women. In no other country or State of the Union are higher average wages paid than here.

The following table of wages was prepared by Major Walker, for many years secretary of the Helena Board of Trade, and was printed in the July number of the Board of Trade Journal, which is published under the auspices of the board and edited by Major Walker:

Prices paid in Helena for skilled artisans and labor.

Brick-layers.....	per day..	\$5.50 to \$6.00
Stone-masons	do.....	5.00
Plasterers	do.....	6.00
Joiners	do.....	4.00
Carpenters	do.....	3.50 to 5.00
Miners	do.....	3.50
Painters.....	do.....	3.50 to 4.00
Plumbers.....	do.....	4.50 to 5.00
Steam-fitters.....	do.....	5.00
Gas-fitters	do.....	4.00
Tinners	do.....	4.00
Brick-moulders	do.....	4.00
Harness-makers	do.....	3.50
Saddlers.....	do.....	4.00
Teamsters	per month..	75.00
Quarrymen.....	per day..	3.50
Male cooks.....	per month..	50.00 to 100.00
Brewers	do.....	65.00
Hands in breweries..	do.....	40.00
Cellar men.....	per month with board..	75.00
Malsters.....	do.....	65.00
Wash-house	do.....	40.00

Professional brewers, first class, of executive ability.....	per year..	\$2,500.00
Delivery wagons.....	per month..	60.00 to 75.00
Prescription clerks.....	do.....	100.00
Printers on morning papers.....	per M..	.50
Printers on evening papers.....	do.....	.45
Wages in printing office.....	per week..	21.00
Butchers.....	per month..	50.00
Meat-cutters.....	per month and board..	70.00
Hostlers.....	per month..	70.00
Stock-tenders.....	do.....	70.00
Hod-carriers and mortar-mixers.....	per day..	3.00
Diggers and shovelers.....	do.....	2.50
Laborers in brick-yards.....	per month and board..	50.00
Temperers.....	do.....	50.00
Hack-drivers.....	per month..	70.00
Stage-drivers.....	per month and board..	50.00
Car-drivers.....	per month..	75.00
Upholsterers.....	do.....	100.00 to 125.00
Book-keepers.....	do.....	75.00 to 150.00
Draughtsmen.....	do.....	85.00 to 125.00
Dry-goods clerks.....	do.....	65.00 to 125.00
Grocers' salesmen.....	do.....	100.00
Clothing salesmen.....	do.....	75.00 to 100.00
Bank clerks.....	do.....	100.00 to 125.00
Jewelers, first class.....	per week..	25.00
Tailors, making coats.....	9.50 to	18.00
Tailors, making pants.....	3.50 to	4.25
Tailors, making vests.....		3.00
Shoemakers, for pair of boots.....		6.00
Shoemakers, repairing, per cent.....		.50
Photographers.....	per week..	15.00 to 30.00
Clerks.....	per month..	75.00 to 100.00
Type-writers.....	do.....	75.00
Stenographers and type-writers.....	do.....	100.00
School teachers and principals.....	do.....	75.00 to 150.00
School teachers, female.....	do.....	50.00 to 75.00

The laws of Montana are especially in the interests of wage-workers. They give them preference and make their wages a lien for all sums earned sixty days prior to any assignments to the extent of \$200. The same preference is given to claims for wages against the estates of deceased persons, coming in first after the expenses of the funeral, the last sickness, and of administration and legal allowance to the widow and infant children; also in case of executions, attachments, and writs of a similar nature, issued against any person, corporation, association, copartnership, or chartered company, upon the claimant making affidavit to his or her claim and filing the same with the sheriff or other executive officer charged with the execution of such writ.

The constitution of Montana, just adopted by the people by an almost unanimous vote, contains the following article in the interest of labor.

The legislative assembly may provide for a bureau of agriculture, labor, and industry, to be located at the capital and be under the control of a commissioner appointed by the governor, subject to the approval of the senate. * * * It shall be unlawful for the warden or other officer of any State penitentiary or reformatory institution in the State of Montana, or for any State officer, to let by contract to any person or persons or corporation, the labor of any convict within said institutions.

For the reason that the provisions of law above quoted are in force, and that the mining and other industries of Montana are as profitable as anywhere in the world, we have no scarcity of laborers. They are well paid and are happy and contented. If a mechanic or laborer has worked here faithfully for five years, and has not squandered his earnings, it is almost the rare exception if he does not own his own house and lot.

PUBLIC BUILDINGS.

The only public building in the Territory, the property of the United States, of any importance, is the United States assay office in Helena. This, with its well-kept grounds, is in perfect order and is well cared for.

The penitentiary, at Deer Lodge, is also the property of the Government at present, but under the provisions of the enabling act admitting Montana as a State in the Union, it will soon become the property of the State, when it will have to be enlarged and otherwise improved in order that it may meet the wants of the community. It at present contains one hundred and sixty-five prisoners, all sentenced to confinement under our Territorial statutes, and cared for by the United States marshal, under contract with the Territory.

The Territory has no public buildings of its own. The insane are cared for and maintained at public expense by private individuals under contract with the Territory, at Warm Springs, Deer Lodge County, and in the most satisfactory manner, though at a heavy expense to the people of the Territory. The number of insane in the asylum on October 1, 1889, is reported at one hundred and eighty-five.

IRRIGATION.

The recent visit of the committee of United States Senators for the purpose of investigating the subject of irrigation, has brought this question prominently before the public, and caused it to become of very general interest.

No one who has investigated the subject carefully can fail to be impressed with the universal feeling among those who rely upon irrigation for raising crops, that it is by far the most certain and satisfactory method of agriculture. This arises principally from two important causes: First, that the average yield from irrigated far exceeds that from non-irrigated lands; second, the certainty of a return for the season's labor.

Irrigation serves as an insurance. The ability to apply water when needed and certain immunity from drought or flood render the certainty of a crop within the almost absolute control of the individual.

To those not familiar with the practice of irrigation, an idea prevails that it is an expensive adjunct of farming. While this may be true in some isolated cases, as a rule it is the opposite, especially when considered in connection with climatic advantages incident to irrigable lands, which include immunity from the expense of costly buildings in which to protect the coarser and bulkier products of the farm, conditions under which the crop can be readily and cheaply harvested, and the great fertilizing qualities of our mountain streams.

The highest priced agricultural lands in the world are in irrigated districts. The irrigated lands of Colorado and Utah produce larger average crops and have a greater value per acre than any farming lands east of the Missouri River. The history of irrigation-development in the United States only embraces a period of twenty-five years; and the pioneers, as in all other industries, gained their knowledge by the costly road of experience; but to-day we find Indian and Chinese wheat, raised by irrigation, underselling the productions of rainy districts.

The most prosperous agricultural districts of Europe to-day are those where irrigation is practiced. No agent of agricultural production is so effective as irrigation.

In Montana, as in all the other Territories within the irrigable area, the quantity of land susceptible of reclamation exceeds the water sup-

ply. The water, therefore, possesses a greater value than the land, and upon its proper economical distribution rests the limit of our future agricultural wealth.

It is therefore of the utmost importance that no wasteful or improper diversion be permitted, and that the State should control its appropriation, as well as its subsequent division among the various claimants. The expense of this work will be heavy, and can not reasonably be provided for by taxation, as are other expenses, but should be paid for out of the proceeds of the sales of these lands. It is impossible for Congress to pass general laws which would operate with equal justice in the arid belt as a whole. Conditions differ in different sections. The people of each section are best calculated to determine upon the system most suited to their needs, and should be allowed to regulate the matters in connection with the subject, and be given the means of carrying them into effect.

Entertaining these views, I conclude the best and only easy way of accomplishing the end desired is that Congress grant to each State in the arid belt, or to each Territory upon its becoming a State, all the irrigable lands within its borders held by the General Government, such States to be charged with the supervision of their reclamation and with their disposal to actual settlers, the proceeds to be used in providing storage reservoirs and in constructing canals and other facilities for conducting the water to the proper points for distribution.

OUR UNDEVELOPED RESOURCES.

It is just now becoming known that we have inexhaustible fields of coal and great deposits of iron ore. There is also an abundance of fine building stone and pure limestone.

The coal mines of Rocky Fork, in Park County, are now producing 500 tons per day; those of Sand Coulee, in Cascade County, the same amount; and Timberline, in Park County, 200 per day. The coal is of first-class quality, and is used on the Manitoba and Northern Pacific railroads exclusively, as well as throughout the Territory for domestic purposes. Near the new town of Chinook, in Choteau County, is a coal vein 22 feet wide. This is entirely undeveloped. In Beaver Head County large coal deposits are known to exist. In Gallatin County, near Bozeman, fine coking coal is found in abundance, and the manufacture of coke for use in our smelting furnaces is fast assuming large proportions. The report of the United States expert for Montana, made to the Bureau of Statistics of the Treasury Department at Washington, gives the number of tons of coal mined for the year ended June 30, 1889, at 118,000 tons, with an assurance from mine superintendents that the increasing demand will cause this amount to be doubled during the present fiscal year.

Thousands of acres of available agricultural lands yet await immigration and occupancy. Especially is this so along the line of the St. Paul, Minneapolis and Manitoba Railroad, recently constructed, running from St. Paul to Helena and Butte City. These lands are included in the recently-opened Indian reservation north of the Missouri River, and are destined to be the most prosperous agricultural portion of Montana. Grain and vegetables grow luxuriantly without irrigation in the valleys, and the hills afford unsurpassed grazing facilities. The entire amount of land susceptible of being converted into grain and grass producing farms is estimated at 16,000,000 acres, covering an area equal to one-half of all the New England States, and capable of supporting many

thousand prosperous and contented families. Already immigration has commenced to pour in, and another season will witness a very large increase in the population of this favored locality.

The nearest United States land office is at Helena, nearly 400 miles distant. I would most urgently recommend the establishment of an additional land office at Chinook for the convenience of the people of this section, and that the lands of the entire Milk River Valley and its tributaries be at once surveyed, that the settlers may have an opportunity of procuring titles without the annoyance, so largely experienced heretofore in Montana, of waiting years for this valuable information.

After more than twenty-five years of Territorial vassalage and the nominal exercise of the rights of citizenship, the people of Montana look forward to the entrance upon and the exercise of the great rights of full citizenship with no little pleasure.

The constitution framed and adopted by our people, by an almost unanimous vote, is believed to be fairly conservative as well as progressive. Under its provisions economy of administration is assured; restrictions upon legislation and extravagant appropriation of public moneys are ample and positive; the salaries of public officers have been fixed at a very conservative figure and in proportion to the services to be rendered and the capacity of the people to pay; special legislation is prohibited when laws of a general character can be made applicable; restriction upon taxation and the creation of public debts are such as to necessitate economy in all public affairs; the interests of labor are amply cared for; free public schools are provided for, which are open to the children of all alike. A careful perusal of all its provisions will satisfy any candid mind that a State government administered in harmony with its spirit and intent will cause an immediate increase in wealth and population and in the happiness of our people.

I am, sir, very respectfully, your obedient servant,

BENJ'N F. WHITE,
Governor.

Hon. JOHN W. NOBLE,
Secretary of the Interior, Washington, D. C.

REPORT
OF
THE GOVERNOR OF NEW MEXICO.

EXECUTIVE OFFICE, TERRITORY OF NEW MEXICO,
Santa Fé, N. Mex., October 12, 1889.

SIR: In compliance with the request in your letter of July 19, I have the honor to transmit the following report on the condition, the progress, and the development of this Territory during the last year.

Before taking up the list of subjects which you enumerate, I beg leave to call attention very briefly to the topic which is of greatest interest in New Mexico, and which on account of that position of importance has been given the same conspicuous place in previous annual reports. I refer to the settlement of our

LAND TITLES.

So much has already been said on this subject by others that there is little to be added. I will simply recapitulate the leading points in the fewest words, by reminding you that New Mexico differs entirely from the remainder of the Territories in this respect; that it is an old and not a new country; that it was settled years before Jamestown, New Amsterdam, or Plymouth; that for over two hundred years it was under Spanish control, and for a quarter of a century was a part of Mexico; that during that long period it was under a system of law, relative to land titles, entirely different from ours; that when acquired by the United States all the land that was owned at all was held under the laws or customs of Spain or Mexico, and that, considering its vast extent and considerable population, those holdings were naturally very numerous.

A change of sovereignty, of course, did not affect private rights; and it will be doubted whether the best course as to land titles would not have been to have left them to be determined in the courts, as if no change of sovereignty had taken place.

But Congress thought otherwise, and in 1854 provided a method by which owners of land under Spanish or Mexican law might obtain American titles for them. This method was by application to the surveyor-general, who was to hear evidence and pass upon the claim and then transmit it to the Secretary of the Interior, by whom it was to be sent to Congress for its action. The object of this system, no doubt, was to determine which part of the land was public domain belonging to the United States; and if every claimant had been required to make his application within a limited time, it might have brought a speedy de-

termination of that question. But no such limitation was in the law, and so it has signally failed to accomplish its object. During the thirty-five years of the existence of this system only one hundred and sixty-three cases have been acted on by the surveyor-general out of all the pieces of property, large and small, owned by parties at the time of the annexation. Nothing could more clearly show the entire failure of the plan, even to determine what is United States land and what is not, than this simple statement. So far as the multitude of small holdings is concerned, it was never even attempted to be used. The trouble and expense of obtaining a title would be far more than the value of the modest farms and gardens or simple homes of the generality of the New Mexico people. And as there is nothing to compel the owner of a vast tract to present his claim, no one in locating land as public domain is safe from the chance that some grant yet to be presented may cover and include it.

To make matters worse, Congress commenced to "confirm" the grants that were approved by the surveyor-general and continued so to do with no apparent hesitation until 1870. It even went so far as to give to the claimants more than they possessed under the Mexican and Spanish laws, for in its "confirmation" it did not even reserve the precious metals which had never belonged to the grant owners under the previous governments. Then suddenly in 1870, after sixty-two had been confirmed, a change of policy took place, and it declined to act at all on any New Mexico land claim, and since that time has made but one single exception, in the case of the Mesita de Juana Lopez grant in 1879.

This made an apparent difference as to goodness of title between the grants that were reported before 1870 and those reported afterwards, and causes the distinction which exists to-day, not only on the Government maps, but in popular estimate, between "confirmed grants" and "unconfirmed grants." It is difficult to see why a private owner, who has a perfect title running back perhaps a hundred years, should need any confirmation of his title by any tribunal; but as some had received confirmation, it naturally threw suspicion on the titles not thus confirmed and affected their value.

Matters were in this very unsatisfactory condition when the late surveyor-general made them worse by endeavoring to unsettle the few things that were supposed to be determined, taking up cases which had been decided twenty-five years ago, when the testimony as heard by the then surveyor-general was satisfactory and he approved a title, and, without notice to any one, or calling a single other witness, or having a word of new evidence, reversing the decision of the surveyor-general who heard the case, and declaring the testimony insufficient and the grant invalid.

From this brief statement it must be evident that the present system does not accomplish the work necessary. What is needed is simply:

1. A limitation of the time within which grants can be presented. Then at the end of that time we may at least know where there are *no* grants.
2. A tribunal exclusively for the hearing of these claims and settlement of these titles. This tribunal should be a court in order to challenge the highest respect, and it should have no connection with any other court, either to interfere with its business, or to be interfered with in turn.

These seem very simple things, and yet delegates, governors, and surveyors-general have been laboring to have them provided, for years

and years, and without result. Our people think that we know the kind of tribunal which would best perform the work; but we are so anxious for relief that we will be satisfied with anything that will settle these titles and do it speedily. To the community at large it is of very little importance whether one man or another owns a piece of land, or whether it is private property or public domain.

The main point is certainty as to the title. If it belongs to a private person, we can negotiate with him; if it is public domain, we know how to proceed. But so long as uncertainty prevails, no one will buy for improvement; and so the development of the country is constantly retarded. Capital will not invest in lands with uncertain titles, and great tracts which would otherwise be fully occupied are therefore idle.

The united voice of the people of New Mexico, regardless of race or creed or politics, cries out for relief in this regard.

With us it is the great vital question. We are willing to leave all details to the wisdom of Congress, but we feel that we have a right to its speedy action.

STATEHOOD.

The people of New Mexico were disappointed that, in the final action of Congress last spring relative to the admission of new States, our Territory was not included. The House of Representatives passed the admission bill, but the Senate refused concurrence, and in the conference committee New Mexico was omitted.

In fact we felt more than disappointed, for we had an obvious right to admission far exceeding that of any other Territory except Dakota. New Mexico was a much older Territory than either of those admitted; its population largely exceeded that of Montana or Washington; it had a special right to self-government under the treaty of Guadalupe Hidalgo; it had only failed of admission in 1876 by an accident, after the enabling act had passed both houses of Congress by large majorities; its resources were both greater and more varied, and its population was better adapted for safe and conservative self-government than that of other sections of the West.

This refusal to admit has forced us to recognize that there is a prejudice in the older States against New Mexico, which, although based solely on ignorance of our condition, yet is none the less powerful and injurious. One idea prevalent in the East is that New Mexico is not prepared for statehood. On the contrary no Territory ever had such thorough preparation. For forty years she has been electing her legislatures and enacting her laws, the only officers usual in States and now appointed by outside authority being the governor, secretary, and supreme judges. As long ago as 1850 she adopted a State constitution and elected her governor and senators, and was only kept out by the adoption of the celebrated "compromise measures" of that year. Twenty years afterwards she held a constitutional convention which formulated a constitution really admirable in its provisions. In 1876 the bill to admit her to statehood passed both houses of Congress, and only by non-concurrence in an amendment failed to become a law.

Another common objection is that the ratio of illiteracy is high. That this is true of the older native population no one will deny. But that condition is being rapidly changed. Official reports show that the ratio was reduced 20 per cent. in five years, and Governor Ross stated in a recent letter to the President:

In no community have more persistent and successful efforts been inaugurated for the promotion of public education than in New Mexico within the last few years.

She has many hundreds of public schools, and a larger share of her general taxation is appropriated to education than in any State. That she has no school fund is simply because she is a Territory and not a State, and admission will provide fully for that. The people are eager for education, and but few of the new generation will not speak English. Besides the public schools there is an unusual number of colleges, academies, and private schools.

To many the character of the population seems to be a bugbear, but this is because the facts are entirely misunderstood.

Only a few months ago a leading journal of national influence spoke of "four-fifths of the population" as being "peon Aztec Indians," whatever they may be! It is true that we have about 10,000 Pueblo Indians in the Territory; but, in the first place, they are remarkably far from being "peons," and, secondly, they do not vote in Territorial elections, though if they did their character is such that they would be a good element in any body politic. But to the uninformed the large number of voters of Spanish descent is looked upon as a grave misfortune. There could not be greater mistake. It is the possession of that conservative element in connection with the energetic and enterprising American from the East which gives New Mexico her special advantages as a self-governing community over most other Territories. Every one familiar with the far West knows that the principal danger in new communities arises from the unsettled and irresponsible character of much of the population. The inhabitants are continually changing. The number of men through all that region with whom two years is a long residence in any one place is astonishing. The habit of moving is upon them, and they are always looking for some new place to which to migrate. An average change of 10 per cent. each year in the population of the towns is less than the registry lists will show. Of course there are many solid, substantial citizens; but this restless, nomadic population constitutes an element that is always active, aggressive, and noisy. They are eager for office, ready to vote for any amount of bonds and taxation; and to their irresponsible action is principally due the heavy indebtedness and not infrequent bankruptcy of so many western cities and counties. They do the mischief and are gone before its effects are felt. The chief danger in a new community comes from this class of men and from the over-enthusiasm of others who think that life in the new West is a continual boom; and many a State and Territory has suffered from it. But New Mexico runs no such risk. She has a solid, stable, responsible, and conservative element in her native population which counteracts the danger. They are attached to the soil and have no thought of leaving. They are identified with the country and naturally opposed to rash schemes which involve extravagant expense and debt. By themselves they might be too slow and non-progressive, but mixed with our over zealous Americans, they form an admirable combination. It is this conservative element which makes New Mexico far more ready in many respects for safe self-government than most other Territories can hope to be for years.

The last legislature provided for the holding of a constitutional convention consisting of 73 delegates, to be elected on the first Tuesday of August and to meet on the first Monday in September. This convention has just been in session, and a finer body of men has seldom convened for any public purpose. It contained many of the best citizens of the Territory, and for ability would compare favorably with any convention ever held.

The constitutional convention continued in session about three weeks

and framed a constitution which is a model of excellence. It contains the best features of all the modern constitutions and is liberal in its provisions, while at the same time it provides every safeguard for the security of public funds and for a conservative administration of government. The article on public education is of peculiar excellence and may serve as a model for other States.

This will be submitted to Congress at the opening of the session, and the speedy passage of an enabling act is earnestly hoped.

The advantages of statehood to New Mexico from a material point of view are very manifest. It will give us a school fund of great value; it will endow our institutions of learning and charity with large donations of public lands; it will give us such representation in Congress that we can obtain necessary legislation; it will bring about an immediate determination of our land titles; it will attract population and cause money to flow hither for investment; above all, it will bring that self-government which is the prerogative of a free people and without which discontent and dissatisfaction are sure to exist. It will raise us from a condition of infancy to the status of full manhood and bestow upon us all the powers and privileges elsewhere enjoyed by American citizens.

POPULATION.

The last census which can be considered altogether accurate was that of 1880, made by the National Government. At that time the total number of inhabitants returned was 119,565, distributed in counties as follows:

Bernalillo	17,225
Colfax	3,398
Dona Ana	7,612
Grant	4,539
Lincoln	2,513
Mora	9,751
Rio Arriba	11,023
San Miguel	20,638
Santa Fé	10,867
Socorro	7,785
Taos	11,029
Valencia	13,095
	119,475

The census of 1885, for various reasons, was not entirely complete, and it has always been considered that the population of the Territory at that time was greater than reported. This census showed the following aggregates by counties, the county of Sierra having been formed in 1884 from portions of the counties of Socorro, Grant, and Dona Ana:

Bernalillo	20,061
Colfax	6,279
Dona Ana	7,921
Grant	7,397
Lincoln	4,777
Mora	10,015
Rio Arriba	11,764
San Miguel	21,435
Santa Fé	10,455
Socorro	12,315
Sierra	2,438
Taos	9,775
Valencia	9,509
	134,141

The only estimate of population made since 1885 is that prepared by The Territorial bureau of immigration in 1889, which reads as follows, San Juan County having been formed in 1887 from territory which in 1880 belonged to Taos County and in 1885 to Rio Arriba:

Bernalillo.....	26,553
Colfax.....	10,317
Dona Ana.....	11,582
Grant.....	11,313
Lincoln.....	9,293
Mora.....	15,067
Rio Arriba.....	14,180
San Juan.....	3,716
San Miguel.....	32,458
Santa Fé.....	17,668
Sierra.....	7,502
Socorro.....	15,280
Taos.....	12,503
Valencia.....	16,658
	204,090

I am inclined to think that this is somewhat too high an estimate, and that the real population is below rather than above 200,000. The registration of voters just prior to the election of 1888 is probably the best index that we have to the exact number, although the ratio of men over twenty-one to the remaining population varies somewhat in the different counties, those in which there are many miners and ranchmen, who are usually without families, containing of course a larger proportion of voters. The following table gives the number of voters registered in each county in 1888, and an estimate in round numbers of the population based on that registration, which, I believe, is as nearly accurate as we can hope to obtain before the next census:

Counties.	Registration.	Estimated population.
Bernalillo.....	5,293	26,000
Colfax.....	2,640	10,500
Dona Ana.....	2,566	12,000
Grant.....	3,127	13,000
Lincoln.....	2,343	9,000
Mora.....	2,940	14,500
Rio Arriba.....	3,133	15,500
San Juan.....	581	2,500
San Miguel.....	7,845	35,000
Santa Fé.....	3,756	17,000
Sierra.....	1,884	7,500
Socorro.....	2,759	12,500
Taos.....	2,200	11,000
Valencia.....	1,804	9,500
	42,871	195,500

SETTLEMENT OF LANDS.

The land offices existing during the last fiscal year were those at Santa Fé and Las Cruces, which are now supplemented by two others, recently established by act of Congress, at Folsom in the northeast and Roswell in the southeast of the Territory.

The office at Folsom was opened on August 12, and that at Roswell will commence operations as soon as copies of the records at Las Cruces can be made for its use.

The entries during the year ending June 30, 1889, were as follows, it being understood that those at Santa Fé were in the north half of the Territory and those at Las Cruces in the south half:

	Santa Fé.		Las Cruces.		Aggregate.	
	Number.	Acres.	Number.	Acres.	Number.	Acres.
Pre-emption filings	413	50,000	283	42,452	696	92,452
Homestead entries	242	36,751	171	25,520	413	62,271
Timber-culture entries	129	19,691	132	19,800	261	39,491
Desert-land entries	37	13,401	108	66,619	145	80,020
Coal entries	39	6,240	11	1,760	50	8,000
Mineral entries	1	10	76	1,293	77	1,303
Total	861	126,093	781	157,444	1,642	283,537

Final action was taken in the following cases:

	[Santa Fé		Las Cruces.	
	Number.	Acres.	Number.	Acres.
Homestead cases	76	11,089	72	9,594
Pre-emption cases	109	12,614	97	9,969
Coal-land cases	3	240	1	80
Desert-land cases	2	760	6	2,527
Total	190	24,703	176	22,170

This is an encouraging exhibit, and the practical effect is very observable by every resident or traveler. It is quite surprising to see the rapidity with which the public domain is being settled by the simple operation of the land laws.

Wherever water is to be found, no matter how remote or isolated the locality, there is the hardy settler, usually with his wife and children, making a home for his family, and full of high hopes for the future. When we remember the large portion of its area that is embraced in Spanish or Mexican grants, and therefore not open for occupation under the United States laws, the number of entries of various classes in New Mexico is as remarkable as it is gratifying.

TAXABLE PROPERTY.

The total assessed valuation of the property of the Territory in 1887 was \$45,462,459; and in 1888 \$45,690,723. The reports of assessment for 1889 are not yet all received at the auditor's office, but those which are already filed show a moderate increase in valuation. This must represent a considerable increase in real-estate values, as the assessment rate on cattle has been reduced in accordance with the decrease in actual value. A few years ago cattle were assessed at \$10 to \$12 per head; this year the rate in most of the counties is \$8, and in some as low as \$7. As the number of cattle assessed exceeds a million, this causes a considerable reduction in the aggregate valuation; but, as above stated, it has been counterbalanced by gains in other classes of property.

RAILROADS.

Railroad building in the Southwest is almost at a standstill. During the year just passed no new road has been put into operation, and the only one in the Territory which has been built at all is that which extends southerly from Deming and is intended to penetrate the republic of Mexico. About 25 miles of this road are graded, and it will very soon be in readiness for travel.

Another railroad which has been partly built within the year is the Kansas City, El Paso and Mexican. This is intended to run from El Paso in a northeast direction to White Oaks, and thence by way of Texas and the Indian Territory to Kansas. It is of great importance to a large section in the southeast of New Mexico, and its coming has especially been looked forward to at White Oaks and vicinity, as it opens up a very rich portion of Lincoln County which abounds in gold, coal, and other products, and especially needs the development which easy and rapid communication will bring. This railroad has been graded from El Paso to the New Mexican line, and the iron laid on about 10 miles of track, but at present no further progress is being made. The rapid influx of population at San Pedro consequent on the recent mineral discoveries there, and the large shipments of ore from that point, have naturally suggested the building of railroads either to connect it with the Atchison, Topeka and Santa Fé Railroad at Cerrillos or Albuquerque, or with the narrow-gauge system of Colorado and northern New Mexico at Santa Fé. The general depression in railway matters, and the embarrassed condition of the Atchison, Topeka and Santa Fé Railroad have probably prevented active operations on the part of that road; but a route is now being surveyed from Santa Fé through Cerrillos to San Pedro, which will connect the immense coal fields of Cerrillos and the large deposits of low-grade silver ore in that vicinity, as well as the mining region of San Pedro, with Colorado and the north.

The mileage of railroads in active operation in the Territory remains as it was last year at 1,130 miles, of which 182 miles are narrow gauge. Every county in the Territory except one (Lincoln) is traversed by these railroads.

CLIMATE AND RAIN-FALL.

There can be little if any doubt that the climate of New Mexico is the most delightful and healthful in the country.

So much has been written on this subject that it is not necessary to enlarge upon it, or to repeat the statistics of health that are already familiar.

Apart from its other advantages, New Mexico may well be called the sanitarium of America; and to those in good health no more delightful summer resorts are to be found than in the places of high altitude like Santa Fé and Las Vegas Hot Springs, while the towns lower down in the Rio Grande Valley are specially adapted to winter residence.

The following table shows the temperature at Santa Fé during each month of the past year from September, 1888, to August, 1889, and also the precipitation of moisture during the same period:

Month.	Temperature.			Precipitation.		Month.	Temperature.			Precipitation.
	Maximum.	Minimum.	Mean.				Maximum.	Minimum.	Mean.	
1888.	°	°	°	Inches.			°	°	°	Inches.
September	82.5	43.1	60	.38		February	50	-1	29.6	.53
October	72.3	29.5	48.4	1.40		March	66	20	41.6	.80
November	64.1	12	35.4	1.30		April	75	26	51.6	.44
December	52	15.5	30.4	.66		May	80	32	56.4	.15
						June	86	37	64.2	.63
1889.						July	90	52	70.5	1.32
January	46	0.	24.6	.84		August	88	54	70.9	1.43

Proceeding now to consider the weather as it affects the cultivation of the soil, it is to be noted that the snow-fall last winter in the mountains of Colorado and northern New Mexico was comparatively light, so that the volume of water derived from melting during the spring and summer has been much less than usual. This of itself would cause the principal rivers to be low, and the supply for irrigation insufficient; but other causes have joined to increase the difficulty thus occasioned. The extensive system of irrigation recently adopted in Colorado, and especially in the San Luis Valley, has greatly reduced the amount of water in the Upper Rio Grande, and at certain seasons entirely exhausted it, so that at times little or no water has crossed the border of New Mexico in that river. This will be referred to later, but is now only alluded to in connection with the causes of the extremely low water this year. Added to these is the very important one that the rain-fall throughout about the whole of the Territory has been exceptionally small. This is true of the whole Rio Grande Valley and the country east of it. July and August usually constitute the "rainy season," which may be said to begin about the middle of the former month. The average rain-fall at Santa Fé during fifteen years of observation previous to 1889 is $5\frac{2}{3}$ inches in the two months. This year it has been but 2.75 inches, or less than half of the average.

Only in one year (1885) was the amount so small as during this summer, and then the fall had been abnormally great during March, April, May, and June, so that the shortage thereafter was not so important.

The table below shows the monthly precipitation during the last seventeen years at Santa Fé, with the exception of a brief period, when no observations were recorded, and is specially valuable for reference in connection with the problems connected with irrigation now awaiting solution. For this and the previous table I am indebted to W. S. Widmeyer, Signal Corps observer.

Monthly precipitation from 1872 to 1888, inclusive.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1872.....	.34	.20	.13	.14	.45	2.44	2.62	2.98	.27	.25	.01	.04
1873.....	.55	.40	.15	.26	.33	1.72	1.02	2.79	1.23	.07	.38	.83
1874.....	1.39	1.60	1.51	1.71	.70	.54	3.92	1.73	1.52	2.47	.58	2.26
1875.....	.67	.72	1.37	.33	.88	.33	6.91	1.59	4.14	.06	1.50	.47
1876.....	.61	.40	.64	.46	.83	1.62	5.43	2.13	.85	.75	.97	.38
1877.....	.18	1.08	.84	1.83	.92	.13	3.54	1.72	.96	1.32	.70	.63
1878.....	.21	.89	.73	.22	1.01	3.18	3.20	5.12	1.03	.00	3.15	.78
1879.....	.77	.23	.15	.48	.37	.51	2.34	2.30	1.07	1.38	1.34	.50
1880.....	.28	.94	.15	.05	.52	.65	2.69	1.79	1.13	.75	.28	.66
1881.....	.38	.22	.57	.98	2.31	.08	4.72	6.28	.91	4.19	1.11	.....
1882.....	.47	.06	.23	.26	1.06	1.36	1.17	4.69	.62	T	.90	.55
1883.....	.42	.96	.40	.11	.87	.....	.....	.....	.....	.....	.....	.....
1884.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.77
1885.....	.26	.53	1.51	1.38	1.31	1.57	1.13	.98	1.87	1.07	1.01	2.27
1886.....	.70	.85	.47	1.33	.21	.95	1.54	4.15	4.02	1.06	.30	.32
1887.....	.10	.85	.66	.74	1.73	.60	2.24	1.57	2.41	1.50	.66	.32
1888.....	.44	.90	.61	1.42	.70	.16	1.98	2.08	.38	1.40	1.30	.66

WATER SUPPLY AND IRRIGATION.

There is no subject which is attracting so much attention in New Mexico to-day as that of an increase of the water supply. It is very obvious that, as the number of acres cultivated and requiring water for irrigation increases, the amount of the water supply must increase cor-

respondingly or there will be a scarcity; and as those living near the head of a river have the first opportunity of using the water, those below are in the greater danger from the inadequacy of supply. It would be fruitless to discuss the legal questions involved as to the ownership and priority of right to the water, for the practical effort should rather be to increase the supply so as to have enough for all. The old system of acequias was only intended for the limited cultivation in a narrow belt on each side of the river, but there is a vastly larger region which can be made of great value by bringing water upon it, and American enterprise will not stop short of its achievement. But this will require long and wide ditches, and the use of great quantities of water; far more than the rivers at certain seasons contain. Yet it is perfectly well known that, taking the whole year together, the amount of water is amply sufficient, so that the problem is, how to save the water which is wasted by running away uselessly at one season until it is needed in the comparatively rainless months. The subjects of irrigation and water storage are therefore directly connected.

I do not propose to go over the ground so well covered in the report of my predecessor for 1888, but it may truthfully be said that the utilization of the vast bodies of land now uncultivated for lack of water, by means of extensive systems of water storage and irrigation, is the question of the hour through all the so-called "arid region" of the West. The people feel that it is as much the business of the Government to render valuable the immense areas, largely of public land, which are now useless for cultivation, as it is to improve the harbors of the sea-board or the rivers (often only so called by courtesy) of the Central States. In New Mexico, Major Powell has for several years been making an examination of parts of the Territory which seemed favorable for extensive operations of the kind indicated, and his plans, if adopted, would entirely transform a great section of country.

On the 6th of September I had the pleasure of meeting the United States Senate Committee on Irrigation, accompanied by Major Powell and others, at El Paso, and arranged for a very brief visit on their part to New Mexico. Fortunately, the constitutional convention then in session had brought together representatives of all sections of the Territory. The committee held two sessions in the capitol at Santa Fé, on September 7, and took a large amount of testimony from those who were familiar with the questions involved, the occasion being one of much interest. It was a subject of deep regret that the committee could not visit various localities where the people had hoped to receive them, but this was, unfortunately, impossible, and we were therefore glad that the sessions at Santa Fé were so successful.

The interest in the subject, which would at any time be great, has been largely enhanced this year by the unusual scarcity of water already referred to. Little or no water has entered the Territory from Colorado since the beginning of the summer, and the absence of the usual rains has prevented the rivers from being filled from their branches here. As a consequence the Rio Grande has been dry for nearly all the distance from Isleta to El Paso, and for several weeks the acequias through that entire district were useless.

While hoping for extensive Government aid in this regard, private enterprise has been far from idle. A list is subjoined of the corporations formed for purposes of irrigation during the single year ending September 1, 1889. The most important operations now in progress are those of the Pecos Irrigation and Investment Company, in the valley of the Pecos. This company is now constructing two immense

canals; the first being 40 miles long, 35 feet wide at the bottom, and carrying 7 feet of water, and the other, 45 miles below, being no less than 50 miles long, 45 feet wide at the bottom, and also carrying 7 feet of water. These are both to be fed by the Pecos, the flow of which is calculated to be 1,000 cubic feet per second. The intervening space is to be supplied by immense reservoirs, three of which are in process of construction; one being $1\frac{1}{4}$ miles long, $\frac{3}{4}$ mile wide and 12 feet deep; one $1\frac{3}{4}$ miles long, 1 mile wide, and 18 feet deep; and the largest, which merits the name of a lake, being $7\frac{1}{2}$ miles long, $2\frac{1}{2}$ miles wide, and 40 feet deep. This vast work will cost about \$1,000,000, and is expected to irrigate between 200,000 and 300,000 acres of land. No one can even imagine what New Mexico will produce when her immense acreage of fertile soil is brought under cultivation through enterprises of this kind.

LIST OF CORPORATIONS FOR IRRIGATION.

- Reservoir Irrigating Company. Locality: Near Navajo Springs.
 The Pecos Valley Land and Industrial Company. Locality: West side of Rio Pecos, in Lincoln County.
 The Pecos Irrigation and Investment Company. Locality: Lincoln County.
 White Oaks Development Company. Locality: Lincoln County.
 Peñasco Tank Irrigating Dam and Ditch Company. Locality: Lincoln County.
 The Union Ditch Company. Locality: San Juan County.
 The Guadalupe Valley Ditch Company. Locality: Lincoln County.
 The Rio Chama Mining and Improvement Company. Locality: Rio Arriba County.
 The Detroit and Rio Grande Reservoir and Pipe Line Company. Locality: Doña Ana County.
 Lower Felix Ditch Company. Locality: Rio Felix, Lincoln County.
 The Bowman Irrigation Company. Locality: Lincoln County.
 The First New Mexican Reservoir and Irrigation Company. Locality: Lincoln County.
 San Juan South Side Canal Company. Locality: San Juan County.
 Lincoln Acequia Company. Locality: Lincoln, Lincoln County.
 The Guadalupe Valley Irrigating and Milling Company. Locality: Lower Rio Peñasco.
 The Pecos River Ditch Company. Locality: West side Pecos River, terminus near Salt Creek.
 The Dark Canyon Ditch Company. Locality: Lincoln County.
 Springer Land Association. Locality: Colfax County.
 The Lincoln County Ditch Company. Locality: Rio Hondo, Lincoln County.
 The Spring Valley Ditch Company. Locality: Lincoln County.
 Perry Fountain Ditch Company. Locality: Lincoln County.
 Albuquerque Irrigating Canal and Land Company. Locality: East bank of Rio Grande in Bernalillo County.
 The San Juan Water Company. Locality: San Juan River, San Juan County.
 The Fort Sumner Land and Ditch Company. Locality: Any place within the Territory.
 The Roswell Water Company. Locality: Roswell, Lincoln County.
 The Dark Canyon Water Company. Locality: Lincoln County.
 The Mountain Irrigation Company. Locality: Lincoln County.
 Uña de Gato Canal and Irrigating Company. Locality: Not specified.
 The Santa Cruz Land and Irrigation Company. Locality: Rio Grande, between La Joya and Santa Cruz.
 Jicarilla Mining and Water Company. Locality: Not specified.
 The La Plata Ditch Company. Locality: Not specified.
 Rio Puerco Irrigation and Improvement Company. Locality: Bernalillo County.

AGRICULTURE AND HORTICULTURE.

These subjects have been so fully discussed in previous reports, in a general way, that I only propose to speak of points connected with the past year's experience. The scarcity of water has necessarily affected crops in certain localities, but not to the extent which was at first feared. This is especially the case in southern New Mexico, where the

lack was not felt until so late in the season that very little injury was done. Visiting the Mesilla Valley, which may be called an actual paradise, at the end of August, when the acequias had been empty for nearly a month, I found the corn in splendid condition, and of almost fabulous height and luxuriance. In parts of the Territory where the season is later and vegetation more backward the same scarcity of water would have been disastrous; but as the great rivers flow from the north, there is of course a more abundant supply of water there. The crops of wheat and kindred grains were harvested everywhere too early to be affected; and potatoes are raised principally along the foothills and small valleys among the mountains, where there are usually frequent local rains.

Horticulture is one of the leading industries of the Territory, and will probably become the principal one in time. New Mexico is the home of the fruit tree and the vine. Its fruit, which has the size and appearance of that of California, possesses the highest flavor, and hence is greatly preferable and commands much better prices. I confidently believe that within a moderate time the whole valley of the Rio Grande will be one vast orchard and vineyard, with no land to spare for common agriculture. And other parts of the Territory seem equally adapted to fruit culture. The Pecos Valley produces splendid specimens; and one of the largest orchards now existing is east of the railroad, in the vicinity of Springer.

Each year sees a great increase in the number and extent of both orchards and vineyards, and the successful introduction and cultivation in the Mesilla Valley of a large number of varieties of foreign grapes, which it was supposed were too tender for our climate, shows that experiment will greatly enlarge the range of our horticultural products.

STOCK-RAISING.

The business of cattle-raising has been in a depressed condition throughout the entire year, not on account of any intrinsic difficulty, but of the low prices to be obtained for the animals when sold. Otherwise the business has been prosperous. No unusual sickness has occurred, nor were any large losses caused by the severity of the winter or scarcity of grass, and the increase has been satisfactory. This should be carefully noted, for it is an important point that the depression is not founded on any natural cause, but arises from the merely artificial one of low prices, which can not be permanent. In the face of this depression, the number of cattle shows a slight increase from 1887 to 1888, the number in the former year having been 1,065,634, and in the latter year 1,127,529. The reports for this year are not yet all received. During the same period the number of horses decreased from 46,666 to 45,119.

There is a marked inclination manifest among many of our cattlemen to sell their steers at two years old to northern cattlemen for transportation to Montana, Colorado, or Wyoming. They claim that the results are more satisfactory than those derived from shipping full-grown cattle to Kansas City or Chicago when prices are as low and uncertain as during the last two years.

Sheep owners met with considerable losses both in the winter of 1887-'88 and that of 1888-'89, the number being reduced by that cause and by sales to parties outside of New Mexico from 1,749,150 in 1887 to 1,339,790 in 1888. The high price of wool during the present season has done much to make up for such losses, and has given a new impetus

to the business. Wool, which brought from 12 to 14 cents in 1888, has sold for 18 to 20 cents in 1889, a difference that has brought a large amount of ready money into the hands of the sheep-raisers. The grade of sheep and quality of wool is constantly improving with satisfactory results.

MINING.

This industry is one of our most important business pursuits.

During the past year it has been carried on with more than average success, and the prospects of the future are bright. In nearly every county there are operations of more or less magnitude, and yet the industry is still in its infancy among us. In but few localities has anything beyond what may be called prospecting been done. No one can travel from camp to camp without being amazed at the vast undeveloped resources of New Mexico in this respect. Enterprise and money are necessary to make productive mines from what are now most promising prospects. The output from nearly all the old camps continues regularly, however, and increases as the years pass. Regions like the Magdalena district, where the most of the mineral is argentiferous galena of low grade, so that the lead is a very important element of value, have necessarily been affected injuriously by the free importation of cheap lead ores from Mexico, and their production has been diminished. The recent decision of the Treasury Department will no doubt cause renewed activity in those camps. But whether in gold, silver, copper, or lead, the product of the past year will compare favorably with any that have preceded. Where there are so many successful camps it is difficult to particularize, but the most notable "strike" of the year is undoubtedly that at San Pedro. The "Big Copper" mine at that place has been running very successfully through the year, employing about 300 men, but nothing else of consequence was being done in the vicinity, when the news suddenly spread of a wonderful discovery of rich carbonates in the "Lucky" mine, in the immediate vicinity of the "Big Copper." The "Lucky" was being worked to a small extent for iron ore for fluxing, when the new ore was struck, and the discovery was as unexpected as it was valuable.

Considerable shipments immediately commenced, and a rush of miners and others to San Pedro quickly ensued. Other similar discoveries have since been made, and there is every prospect of the formation of a very important permanent mining camp at that place.

The sale of the "Cash Entry" at Cerrillos to an English company, which is about to carry on operations on a very large scale and to erect works of considerable magnitude, should be mentioned, because it can not fail to have an important effect in that vicinity, and will stimulate mineral development there to a great extent.

Our miners feel that in some way the expense of obtaining mineral patents should be reduced. At present it is so large as to deter most persons from patenting their claims, and hence titles remain in a condition which is apt to lead to litigation whenever a property is found to be valuable. It is felt that there is too great a disproportion between the cost of a mineral patent and a title by pre-emption or otherwise to agricultural land. There seems to be no reason why the miner, whose occupation is certainly more toilsome and dangerous than that of the farmer, should be discriminated against in this way.

The coal mines are being largely and successfully worked in many parts of the Territory. In certain sections, as at White Oaks, they can not be utilized to any great extent at present on account of the

lack of railroad transportation. Time, however, will bring all necessary facilities, and meanwhile the coal will not decrease, either in amount or value. The fields in the vicinity of Raton, Cerrillos, Gallup, and San Pedro (Socorro County) are all being successfully and extensively worked, and a number of new mines are being opened.

FORESTS AND LUMBER.

There is little to be stated under this head, in addition to what is contained in the report of 1888. The lumber regions of the Territory are very extensive, and especially valuable from the fact that Texas and Mexico are so deficient in this respect.

The largest producing region at present is the Tierra Amarilla grant, on which there are no less than five saw-mills in operation, turning out about 125,000 feet of lumber each day. An extensive business is also being done on the Petaca grant. The two grants above named, with the Vallecito grant which lies between them, constitute one of the finest timber sections of the country. Saw-mills are scattered all over the Territory and are bringing profitable returns to the owners. There can be no doubt that this branch of industry will increase in its importance as new districts are opened by obtaining railroad facilities, and as the supply in older States becomes reduced.

EDUCATION.

There is a constant improvement in educational matters in the Territory, and their condition, while not entirely satisfactory, is very encouraging. The Territorial auditor, Hon. Trinidad Alaria, in publishing his annual statement, which is condensed from the school reports of county officers, says:

The progress made in the public schools is quite encouraging, and by working all together in favor of education I hope to see the public schools in the Territory as prosperous as any in the Union. Our people are taking a sincere interest in the advancement of education.

Our school law is by no means perfect, and is specially defective in not providing a Territorial superintendent as a responsible head of the system of public education. This as well as other defects will be remedied as soon as the State constitution goes into effect, as it contains excellent provisions on the subject.

The lack of a school fund is a serious drawback to successful work, but without special Congressional action the lands reserved for this purpose are not available while New Mexico continues a Territory. Allusion is made to this under its appropriate head.

I have not been able to obtain as complete statistics as are desirable, but the following figures are substantially correct:

Number of pupils enrolled (three counties estimated)	16,803
Average daily attendance (two counties estimated)	12,394
Number of male teachers (four counties estimated)	303
Number of female teachers (four counties estimated)	185

These figures refer to public schools only. Our private educational institutions, colleges, seminaries, academies, etc., are numerous, well conducted, and successful. All of these are conducted in English.

In view of a prevalent misconception at the East as to the languages in which our public schools are taught, I have endeavored to procure information on that subject, but have not heard from all the counties. The following figures show the number of schools taught in English, the number

taught in Spanish, and the number in which both languages are used in each of the counties named :

Counties.	English.	Spanish.	Both languages.
Socorro	19	20	7
Doña Ana	20	8	1
Colfax	15	10	8
Mora			41
Taos		19	5
San Juan	14		
Bernalillo	3	20	19
Valencia		29	
Sierra	7		5
Lincoln	33		
Grant	26		1
Santa Fé	6		6
Total	143	106	93

SCHOOL LANDS.

Nothing has occurred regarding these lands within the year. Being reserved from sale or entry, they simply remain unoccupied and unused, until New Mexico shall be admitted as a State, and come into this inheritance devoted to educational purposes.

While this reservation until statehood seems to be the settled policy of the Government, yet it is doubtful whether in some cases there is not a greater need of the aid afforded by a school fund during the comparatively poor days of a Territorial existence than when the country has become rich and populous. We hope that our admission as a State will be at such an early date that no special legislation will be needed in our case; but if for any cause it should be delayed, I renew the recommendation that Congress should permit the immediate sale of some portion of the lands, so that a fund could be formed that would afford much needed aid to the work of general education.

INDIANS.

Nothing has occurred to change the condition of the Indians in New Mexico within the last year. We have the same reservations for the Navajoes and the Mescalero Apaches, and the same nineteen Pueblo towns. There has been a change of agents at the Pueblo Agency, at Santa Fé, and at the Mescalero Agency, consequent on the incoming of a new administration, but nothing has occurred to mar the peaceable and prosperous situation.

There was a fear at one time that trouble might arise from the desire of a few reckless men to invade the Navajo Reservation in search of a mythical mine of marvelous richness, but fortunately the projected expedition was abandoned. The Navajoes are steadily increasing in wealth, and are living happy and contented lives. Their population is now about 21,000, and is rapidly increasing. Their live stock is estimated as follows: Horses, 250,000; mules, 500; burros, 1,000; cattle, 5,000; sheep, 700,000; goats, 200,000. The wool-clip last year reached 2,100,000 pounds. Their agent says that they are beginning to realize that the possession of so many horses is not advantageous, and some are exchanging their horses for cattle.

The Pueblos are the same industrious, moral, and orderly people that they were when first seen by Cabeza de Vaca, three and a half centuries ago. Having had the good fortune to obtain absolute titles

to their lands long before the American occupation, they are not subject to the changes of location caused by the avarice or caprice of the white man to which others have been subjected, and in their condition of peace and prosperity present a valuable illustration of what we may hope of other Indians when they are the absolute owners of the land on which they live and thus have an incentive to make permanent homes and improve their surroundings.

The number of Indians on the Mescalero Reservation is now 474.

The Indian schools are all in a flourishing condition, and their influence on the younger generation will soon be manifest in the improved condition of the various tribes.

One suggestion which comes from the Pueblo agent is worthy of consideration and I think of adoption. It is that several of the most promising of the pupils at Carlisle or the local schools receive medical education. There certainly should be a good physician in each Pueblo village and on each reservation, and one of their own people would have far more influence in weaning them from over-confidence in their medicine men than any stranger. The number of deaths among the children from small-pox, diphtheria, and kindred diseases is surprisingly large, and could be greatly reduced by the exertions of a resident physician. I commend this suggestion to the attention of the Department.

PUBLIC BUILDINGS.

The public buildings of the Territory are yet but two, being the capitol and the penitentiary, described in previous reports.

The capitol is without doubt the finest public building of its cost in the United States. It is not only substantial and commodious, but beautiful and tasteful. It elicits expressions of admiration from every visitor, and of astonishment from all who are familiar with the cost of public buildings in general. Apart from its proper use, it has been worth more than it cost to the people of the Territory in showing them what can be obtained for a given amount of money honestly and intelligently expended, and in thus being a criterion for the cost of other public buildings.

The entire expense of construction was within the appropriation of \$200,000. The legislature of 1887 appropriated an additional \$50,000 for furniture, fencing, arrangement of surrounding grounds, etc., and the latter work is just completed. The capitol grounds form a square, about 500 by 500 feet and fronting on two avenues, and are now surrounded by substantial and tasteful stone walls and iron fences, and are planted with ornamental trees of different varieties. The whole appearance of the building and surrounding grounds is not only creditable but elegant.

The late legislature provided for the erection of five public institutions, the "University of New Mexico," at Albuquerque; the "Agricultural College and Agricultural Station of New Mexico," at Las Cruces; the "New Mexico School of Mines," at Socorro; and the "New Mexico Insane Asylum," at Las Vegas. In each of these cases the people of the locality were required to obtain and convey to the Territory the necessary land, varying from 5 to 100 acres, and this has already been done and the trustees of the different institutions appointed. Building will commence when sufficient amounts have accrued from taxation, but the institutions will depend largely for their support on the donations of land to be received from Congress when the Territory becomes a State.

Excellent modern court-houses of stone or brick, most of them having jails attached, have been erected in the following counties :

Colfax, at Springer, costing about.....	\$25,000
San Miguel, at Las Vegas, costing about.....	126,000
Santa Fé, at Santa Fé, costing about	50,000
Bernalillo, at Albuquerque, costing about.....	97,000
Socorro, at Socorro, costing about	48,000
Grant, at Silver City, costing about.....	36,000
Doña Ana, at Las Cruces, costing about	40,000

In addition to these, Taos County has a court-house which has been enlarged during the last few years, and a jail with improved steel cells; Rio Arriba County has a substantial stone jail at Tierra Amerilla; Lincoln County owns a large building, which was purchased at a cost of \$15,000, for the purposes of a court-house, and also has a jail with steel cells, adjoining; Sierra County, which was organized in 1884, has purchased land and is occupying temporary buildings upon it preparatory to erecting new structures; and Mora County is now building a fine modern court-house at Mora, the contract price of which is about \$50,000, and which, with the jail and accessories, will cost in all \$70,000.

It is to be noted that all of these new court-houses and jails have been erected within the last ten years, which is an evidence of the spirit of progress which now influences the Territory.

During the past year the United States building at Santa Fé has been completed, and is an elegant structure, creditable to the architect and ornamental to the city. The offices of the surveyor-general, register of the land office, receiver of public moneys, and collector of internal revenue have already been removed to this building, and those of the United States attorney and United States marshal, which are provided there, will be occupied as soon as the term of rental of the rooms now used by them expires.

The history of this building is peculiar and extends over many years.

The land on which it stands was part of the public grounds acquired from the Mexican Government by the treaty of Guadalupe Hidalgo. Immediately after the organization of the Territory of New Mexico in 1850, Congress proceeded to provide suitable public buildings for its use, and the civil appropriation bill approved September 30, 1850, appropriated \$20,000 "for public buildings for the Territory of New Mexico." This appropriation was expended in laying the foundation for a capitol building in the center of the square north of the military quarters.

By the deficiency appropriation bill approved May 31, 1854, Congress appropriated \$50,000 "to complete the public buildings in New Mexico." This sum was expended in erecting the capitol building to a height of one and a half stories above the basement, and in laying the foundation for a Territorial prison in the westerly portion of the square.

In 1860 a further appropriation was made of \$60,000 "for the completion of the capitol in the Territory of New Mexico."

This was never paid. The rebellion commencing in 1861, our Delegate in Congress gave up the appropriation in consideration of the exemption of New Mexico from certain war taxes.

The building remained for a quarter of a century in a condition of increasing dilapidation, until in 1883 the square in which it stands was used for the great "Tertio-Millennial Celebration," which took place during the summer of that year. The grounds, which had been excavated for the manufacture of adobes and were the receptacle of all the refuse of the city, were then graded and put in order, and the unfinished building was floored and roofed and used in connection with the celebration.

In the series of pageants reproducing historical events in New Mexico, it represented the Pueblo town of Cibola, and as such was filled with Indian chiefs and warriors, while besieged by the Spaniards under Coronado.

After this it again relapsed into "innocuous desuetude," until the recent act of Congress caused it to be remodeled and completed and to become the beautiful United States building of to-day. The grounds have been tastefully arranged, and an elegant circular stone wall surmounted by an iron fence erected, making it altogether one of the most attractive features of the city.

The United States is erecting a large building for an Indian school at Santa Fé, on a plot of 100 acres of ground donated by the citizens for that purpose. Its construction was commenced in July of this year, and it is expected to be occupied next year.

The "Governor's Palace" at Santa Fé is by far the most interesting building historically within the limits of the United States. It occupies the entire northerly side of the Plaza, being nearly 300 feet in length and 40 feet deep. It was probably built a short time before the year 1600, and has been the seat of the civil authority of the Territory ever since.

The long line of Spanish governors, viceroys, and captains-general occupied it for over two hundred years, except the brief interval of the Pueblo revolution, when the Indian authorities were there. From 1822 to 1846 the Mexican governors and "political chiefs" made it their official residence, and from 1846 to the present time it has been similarly occupied by the American governors, both as office and residence. Thus by almost three centuries of constant official use it has become identified in the minds of the people with the seat of civil authority, and is looked upon by every native of New Mexico with respect and veneration.

It should be preserved and cherished, not only for its historic associations but as the best existing specimen of the old Spanish-American architecture. Its ultimate use should be as the home for the antiquities, curiosities, and historic objects connected with New Mexico. Governor Sheldon, in his annual report for 1884, said: "If there is antiquity in the United States it is to be found in Santa Fé, and the 'palace' is the most illustrative among the buildings. It has been completed and was occupied as the official residence by the Spanish governors or viceroys forty years before the Pilgrims landed at Plymouth Rock. This building should be preserved. There ought to be set apart a sufficient room for the public library, which embraces the old Spanish records and documents, and the exhibition of archæological curiosities. These may now be collected in attractive quantities, but are becoming scarce as time rolls on. To preserve illustrations of a past and unique civilization will be a gratification to future generations, and a tribute of respect to the Spanish-American population."

Governor Ross in 1888 addressed a lengthy communication to the Secretary of the Interior taking the same view. The legislature of 1882 memorialized the President and Congress on the subject, asking that the portion of the building not used by the governor might be assigned to a historical society. The succeeding legislature unanimously passed similar resolutions on April 3, 1884.

At the present time the easterly end of the building is occupied by the Historical Society of New Mexico, an institution supported in part by the Territory; the west end has been fitted up for the post-office of Santa Fé; in the center is the governor's office, and of late certain

rooms have been occupied as quarters by a lieutenant of the Army. It is to be hoped that this building, so venerable and interesting in its history and associations, will not be permitted to be used more than temporarily for any purposes apart from those to which it has so long been dedicated and with which it is identified in the minds of the people, or for such as are historically appropriate.

LEGISLATION.

The twenty-eighth session of the legislature commenced on December 31, 1888, and adjourned February 28, 1889. The amount of legislation was larger than usual, no less than one hundred and forty-five laws being enacted.

The most important of these is the finance act, which provides for the first time a financial system worthy of the name, and will be of great benefit to the Territory. An act relating to forms of pleading is an important step towards modernizing the antiquated practice heretofore in vogue, and gives hope of the early adoption of a complete code. Other excellent general laws, several of which were the suggestion of the Territorial Bar Association, are the acts relating to limited partnerships, to voluntary assignments, to preference by insolvents, to estates and administration, and to forms of acknowledgment. Stringent laws were also passed in relation to lotteries, the sale of poisons, the adulteration of food, and the introduction of cattle disease. This legislature also formed two new counties, Chavez and Eddy, in the southeast of the Territory, provided for a constitutional convention which is elsewhere referred to, and established four important Territorial institutions, viz, the university, the agricultural college, the school of mines, and the lunatic asylum.

UNDEVELOPED RESOURCES.

The fact is, and I state it deliberately after long observation and a full consideration of its broad significance, that New Mexico is endowed with a greater variety and extent of natural resources and advantages than any State of the Union.

This language may sound extravagant, but a very little thought will show its truth. All will concede that in gold and silver, in copper and lead, we far surpass all the States east of the Rocky Mountains. Michigan may have copper, and Missouri lead, but they are devoid of precious metals. Georgia and North Carolina have mines of gold once thought to be important, but even in that respect, without counting our wealth of other metals, we have greatly the advantage.

Colorado and Nevada, by reason of their large development, excel us in the silver product, but in other metals they are inferior, and when the mineral kingdom is left they have nothing to show to compare with the fertile valleys of our rivers; and in the product of the field, the market garden, the orchard, and the vineyard New Mexico is immeasurably superior.

California alone seems at first sight to possess equal advantages. There they have mineral of great value, and at the same time possess splendid agricultural land and the magnificent fruit and grape regions of the south. But, after all, their mineral is all of one metal. They can not equal us in silver or copper, in lead or iron. Their fruit, while beautiful, is deficient in flavor. And the possession of one single article, which is one of the staple needs of man, in quantities inexhaustible,

gives us an absolute stamp of superiority. That article is coal. In these boundless beds of untold riches, in the vast extent of the bituminous, and in the almost exclusive possession, so far as the West is concerned, of the anthracite, we possess an advantage which would counterbalance many deficiencies, did we suffer from them. Our resources are of the most varied character. Here are thousands of acres of timber superior to the best that Maine or Georgia ever contained; here are wheat fields in Taos and Mora used uninterruptedly for centuries without rotation of crops, yet equaling the finest wheat land of the Northwest; here is corn in many localities the peer of any on the plains of Illinois or Kansas; here are onions and beets, cabbages and cauliflowers, potatoes and melons, the products of the various valleys, which, both in size and quality, challenge comparison with any in the country; here are apples, pears, peaches, plums, and apricots superior in size to anything seen in the East and far surpassing those of California in flavor. All along the Rio Grande, from Bernalillo to Mesilla, are vineyards which proclaim that valley to be the favored home of the grape, whether for eating or for the manufacture of wine.

Among natural plants, our plains are covered with the amole or yucca, whose root produces the finest of soap and the fibre of which is becoming an extensive article of commerce, while the virtues of the cañaigre as a tanning agent are just growing into prominence.

The vast prairies of the Territory constitute magnificent pasture lands for flocks and herds, and are covered with tens of thousands of cattle and sheep.

In gold, whether "in place," as in Lincoln and Colfax, or in placers, as in scores of other localities, we acknowledge few superiors.

In silver, though yet but little developed, more than half of our counties contain such vast stores that it is difficult to realize the extent of the untold wealth awaiting the hand of the miner. In copper, from Santa Rita in the southwest to San Andres, San Pedro, and Picuris, are mines which challenge the admiration of the world. We have as much lead as the great lead regions, and as much iron as the most celebrated iron districts. We have mica of excellent quality, and cement which is inferior to none. We have gypsum and fireclay in inexhaustible amounts, and we have marbles of rare excellence and of almost every shade.

Whole sections of our Territory are underlaid with coal of excellent coking qualities, and we have the only perfect anthracite to be found west of Pennsylvania; with a market for each extending in nearly every direction for hundreds of miles.

I have recapitulated some of these resources to show how bounteously Providence has endowed us. In this connection it is interesting to remember that even in the first days of our known history New Mexico was found full of valuable products unheard of in the regions to the north and east.

Clavigero relates that centuries ago the Toltecs, leaving their old homes to the northwest, about the year 590, journeyed toward Mexico, "sowing the land with corn, cotton, and other plants, the seeds of which they carried with them." Cabeza de Vaca, the first European who ever trod on New Mexican soil, tells us not only of cities of permanent dwellings of great height, but in his narrative minutely describes the products of the country and the food of its inhabitants. So enormous was the number of buffalo which he found grazing along the Pecos for a distance of 30 leagues that the traveler called the people of that section the "Cow Nation." All through Texas he had seen

no cultivated grain, but no sooner had he arrived within New Mexico than he met with fields of corn, and they increased in extent continually as he proceeded into the Territory. Soon after, he mentions a place still east of the Rio Grande, where he was "feasted on beans and pumpkins." The natives also made cakes of piñons crushed or ground for the purpose. After crossing the Rio Grande, he speaks continually of the beans, corn, and calabosas, so plentiful that the Spaniards gave thanks to heaven for their abundance; and also of the shawls or blankets of cotton which the people wore. Here he also found amole root used for soap, and the inhabitants provided with shoes of leather. Of minerals he speaks of galena and marquesite, of a bell of copper, of turquoise, and of emeralds.

The travelers who came after emphasize this description of products, and add somewhat to it, as might be expected from their greater advantages.

Thus Marcos de Niza, in 1540, tells of the long gowns of cotton worn by the people of Cibola (the modern Zuñi), and of the cotton clothing found all along the route which he followed, and narrates the following anecdote, which is the first notice that we have of native wool in this country: Marcos was dressed at the time, it appears, in a suit of gray woolen cloth, then called saragosa, which Coronado had sent to him. Some of the principal chiefs examined this material with great interest and then said to the friar that at Totonteac (Moqui) there was abundance of similar stuff, of which the people there made their clothes. Marcos, wishing to ascertain if they really distinguished the difference between cotton and wool, laughingly said that the material of their own clothing (which was of cotton) and his was the same. At this they seemed indignant, and said: "Thinkest thou that we are ignorant that this fabric is different from what we wear? Thou wilt see in Cibola all the houses full of material such as ours; but at Totonteac are little animals which furnish the wool from which your kind of cloth is made." This greatly interested Marcos, as it was the first intimation of the existence of sheep in the country; and it is of interest to us to-day as tracing to its earliest record the great industry which now gives support to more of the inhabitants of New Mexico than almost any other.

A year later, when Coronado entered the city, he found at Cibola large numbers of domestic hens, as well as great stores of beans, corn, and melons. The corn, Castaneda tells us, had very short stalks, and the ears started near the ground, but they were of a size that astonished the Spaniards, containing from 700 to 800 grains, which exceeded anything known in other countries at that time.

At Moqui, Coronado found all the arable land used in the cultivation of grain, fruit, and vegetables, and the pastures full of flocks of sheep and goats, thus corroborating the statements of the chiefs to Marcos de Niza.

At Acoma the people presented his army with a quantity of poultry, bread, corn, cornmeal, and piñons.

At Tiguex and Cicuye, the two great towns of that day, and both situate in central New Mexico, all the people were found clothed in cotton garments, in some cases supplemented by mantles of leather. At Cicuye presents of cotton goods and turquoise were made to the Spaniards, and at Tiguex, Coronado demanded from the people a contribution of no less than 300 pieces of cotton stuff for clothing for his soldiers. From this we can judge of the amount of cotton then raised and woven by the Pueblos, and it also suggests the question why this

important product is not cultivated to-day. Mention is also made of the grapes, plums, and mulberries found on the plains to the east of the mountains, growing without cultivation. So rich was the soil of the valley of the Rio Grande that Castañeda says: "The soil is so fertile that it does not need to be worked. When they sow, the snow falling covers the seed and the corn starts underneath. The harvest of one year is sufficient for seven. When they begin to sow the fields are still covered with the corn that has not yet been gathered."

Forty years afterwards, in 1582, Espejo, traveling up the Rio Grande, found abundance of corn and melons, and the people dressed in cotton clothes and wearing boots and shoes of the thickest of the leather. Just below Albuquerque, near Isleta, he met one chief who presented him with 400 bolls of cotton. Here the people wore mantles of cotton, striped blue and white, like those of China. On his first trip west of the river he speaks of the great herds of cattle and the amount of cotton annually raised, and at Moqui the history tells us that when Espejo and his companions spoke of leaving the town the people brought him a "present of many mantles, some colored and some white, and a great quantity of handkerchiefs or towels with tassels at the corners, and many other things."

West of Moqui, on his celebrated excursion to the great silver mine, Espejo found good grapes and flax like that of Castile; and he tells us of the mine itself, that it has a very broad vein, and that "with his own hands he took out very rich ore containing much silver."

Indeed, mines seem to have been opened to quite an extent all over the Territory even at that very early day, before Spanish working was begun.

Espejo also speaks of the wonderful grazing country along the Pecos, and the enormous herds of buffalo there congregated, calling the river "Rio de las Vacas," in the same way that Cabeza de Vaca had formerly described the people.

When Oñate came (in 1595) he found the same cultivation of beans, corn, and pumpkins, and the same growth of cotton spoken of by the preceding travelers.

Thus we see that three hundred and fifty years ago the Pecos Valley was, as to-day, a favorite grazing country, covered with herds of untold thousands; that the people of New Mexico raised corn, beans, calabashes, pumpkins, and melons, and also large quantities of cotton, which they manufactured into clothes; that in certain sections they had sheep from whose wool were made the warmer garments of the people; that their clothes were ornamented by the use of colors, and their towels with tassels; that their pottery was of a high order of excellence both as to utility and ornament, and that mines of various metals were worked long before the Spanish occupation.

In short we learn that the history of New Mexico has always been one of agricultural, pastoral, industrial, and mining success; that the time is not known when its valleys were not the home of prosperous cultivation, its plains not covered with herds of cattle, its hillsides not cropped by the wool-producing sheep, and its mines not worked for both metals and precious stones.

Thus, looking far back beyond the time when the Spaniard came to St. Augustine, the cavalier to Jamestown, the Hollander to New Amsterdam, or the Pilgrim to Plymouth, we find that New Mexico possesses a heritage of successful production, and that whether viewed as the home of animal, vegetable, or mineral wealth, from time immemorial

she has a history of prosperity based on the rich natural resources with which a good Providence has endowed her.

It is an inspiring and suggestive thought that while the whole Atlantic Coast and Mississippi Valley were the homes of roving tribes and covered with an almost unbroken forest New Mexico was raising cotton and wool for clothing, and corn, beans, and melons for food; was manufacturing good flour and fine pottery; building great cities of terraced, four-storied houses, and excavating her hills in search of the precious metals and the more precious jewels.

We need not be surprised that with such a history, and with the natural advantages which made that history possible, we are able to-day to make the claim which I have put forward of possessing the greatest variety of resources of any part of the great American Republic.

GOOD ORDER.

I can not close this report without a word as to the admirable condition of society which exists, and the quiet and good order which is everywhere prevalent in the Territory. My first experience in New Mexico, as chief justice, in 1879, was at a time when the advancing railroads were bringing an influx of the violent and the vicious into New Mexico, from which it suffered for several years. The rough class of men supposed to be characteristic of border life were also represented in our population at that time, and the courts were well occupied by the criminal business alone. The native population, however, was, as a rule, law-abiding and respectful to authority, and was chargeable with but few crimes.

The years have wrought a great change. The horde that followed the railroad has passed on to other lands, only leaving a few representatives in our penitentiary. The desperado and the "bold bad man" have disappeared. The days of Billy the Kid, of Rudebaugh, and Hoodoo Brown are long since over, and one can scarcely realize that such characters ever existed among us.

No more peaceful or safe community is to be found in the whole land. Crime is more rare than in staid New England, and one may traverse the whole Territory on horseback alone without danger. A recent fact presents a strong illustration of this peaceful condition. The county of Lincoln is of great size. It contains over 26,500 square miles and exceeds in area the four New England States of New Hampshire, Massachusetts, Rhode Island, and Connecticut, with New Jersey and Delaware added. It borders on Texas, and it is devoted principally to ranching and mining. Its sheriff is an efficient officer, who would let no criminal escape. I visited that county during last July, and examined its jail. It was empty! There was not a single man undergoing imprisonment there, nor one in confinement awaiting trial! I submit that no similar area in the whole country can show such a record as that.

L. BRADFORD PRINCE,
Governor of New Mexico.

Hon. JOHN W. NOBLE,
Secretary of the Interior.

REPORT

OF

THE GOVERNOR OF UTAH.

TERRITORY OF UTAH,
Salt Lake City, October 20, 1889.

SIR: In compliance with the request made in your letter of July 19, 1889, I respectfully submit the following report of affairs in Utah Territory:

There has been no census of the inhabitants of the Territory since the national census of 1880. It is now estimated that the total population of the Territory is 230,000.

The estimated population of the counties is as follows:

County.	Population.	County.	Population.
Beaver	5,300	Salt Lake	60,000
Box Elder	8,480	San Juan	400
Cache	19,120	San Pete	16,400
Davis	6,610	Summit	9,420
Emery	5,540	Sevier	5,800
Garfield	2,120	Tooele	5,950
Iron	4,240	Uintah	2,850
Juab	4,800	Utah	23,760
Kane	5,300	Wasatch	3,710
Millard	4,505	Washington	5,300
Morgan	2,120	Weber	22,770
Pi Ute	3,280		
Rich	2,120	Total	229,895

Of the 143,962 persons in Utah in 1880, 99,969 were natives of the United States, 80,841 of whom were born in Utah.

Since 1880 the foreign-born population has been increased by Mormon immigration as follows:

Year.	Population.	Year.	Population.
1881	2,233	1887	1,027
1882	2,693	1888	1,419
1883	2,462	1889	1,368
1884	1,799		
1885	1,549	Total	16,094
1886	1,544		

POPULATION, ASSESSED VALUE OF PROPERTY, AND INDEBTEDNESS OF CITIES AND TOWNS.

Statement showing the population of the incorporated cities and towns of Utah Territory; the assessed value of the property and the indebtedness of the same for the year 1889, together with the population in 1880.

	Assessed valuation of property.	Indebted- ness.	Estimated population, 1889.	Population, 1880.
<i>Cities incorporated under special charters.</i>				
American Fork	\$220,000	None.	2,300	1,825
Alpine	70,000	\$200	400	319
Beaver	251,171	500	1,900	1,911
Brigham City	300,000	None.	3,000	1,877
Cedar City	113,000	800	1,000	691
Coalville	146,000	None.	1,500	911
Corinne	162,255	None.	275	277
Ephraim	120,000	None.	2,400	1,698
Fairview	80,000	None.	1,225	863
Fillmore	100,000	850	1,100	957
Grantsville	150,000	None.	860	1,007
Hyrum	240,800	None.	2,100	1,234
Kaysville	250,000	5,000	1,600	1,187
Lehi City	270,340	None.	2,200	1,538
Logan	(*)	(*)	4,500	3,396
Manti	225,000	None.	2,500	1,748
Mendon	43,000	None.	600	543
Moroni	90,000	None.	1,225	838
Mount Pleasant	180,000	None.	2,500	2,004
Morgan	127,980	None.	700	433
Ogden	†7,000,000	100,000	15,000	6,069
Park City	621,566	None.	6,000	1,542
Parowan	100,000	None.	1,000	957
Payson	228,000	None.	2,300	1,788
Pleasant Grove	228,850	400	2,200	1,775
Provo	1,000,000	None.	6,000	3,432
Richfield	143,521	None.	1,700	1,197
Richmond	116,750	None.	1,150	1,198
Salt Lake City	16,611,752	385,000	45,060	20,768
Smithfield	147,640	1,500	1,500	1,177
Spanish Fork	238,932	None.	3,000	2,304
Spring City	67,200	None.	1,200	989
Springville	420,000	None.	3,000	2,312
St. George	242,315	834	1,400	1,332
Tooele City	107,909	None.	1,100	918
Washington	53,700	None.	376	483
Wellsville	100,000	None.	1,500	1,193
Willard	73,653	457	600	412
<i>Cities and towns incorporated under general laws.</i>				
Bear River	1,565	None.	400	340
Fountain Green	71,420	None.	700	601
Heber City	(*)	None.	1,600	1,291
Kanab	46,950	None.	570	394
Monroe	71,000	None.	875	744
Nephi	(*)	None.	2,200	1,797
Salem	5,000	.....	625	510
Total	30,837,269	495,541	134,881	80,810

* No return. † The assessment for city purposes is 50 per cent, higher than for county and Territorial purposes.

REVENUE FOR 1888.

Statement of the revenue from the tax levy for the year 1888, at the rate of three-fifths of one per cent., for Territorial and school purposes.

County.	Amount.	County.	Amount.
Beaver	\$3,773.12	San Pete.....	\$9,958.55
Box Elder	14,900.38	Sevier	3,952.97
Cache	13,291.10	Summit.....	11,700.00
Davis	8,718.23	Tooele	8,031.66
Emery	6,161.80	Uintah	1,675.11
Garfield	1,444.99	Utah	25,773.19
Iron	2,499.19	Wasatch.....	3,389.21
Juab	7,342.58	Washington	3,836.14
Kane	1,636.29	Weber.....	27,714.60
Millard	5,936.76		
Morgan	3,040.62	Total for 1888.....	282,393.94
Pi Ute.....	1,605.01	Total for 1887.....	227,361.48
Rich	2,623.40		
Salt Lake.....	111,341.82	Increase.....	55,032.43
San Juan.....	2,047.22		

Or 24 per cent.

REAL AND PERSONAL PROPERTY, 1889.

Statement showing the assessed valuation of real and personal property in the several counties of Utah Territory for the year 1889.

County.	Real property.	Personal prop-erty.	Total 1889.	Total 1888.
Beaver	\$381,485.50	\$365,634.00	\$747,119.50	\$628,853.33 $\frac{1}{2}$
Box Elder	1,991,702.00	482,492.00	2,474,194.00	2,483,396.66 $\frac{2}{3}$
Cache	1,659,030.00	711,628.00	2,370,658.00	2,215,183.33 $\frac{1}{3}$
Davis	1,355,370.00	213,349.00	1,568,719.00	1,453,038.33 $\frac{1}{3}$
Emery	1,625,133.00	132,344.00	1,757,477.00	1,026,966.66 $\frac{2}{3}$
Garfield	(*)	(*)	240,831.66 $\frac{2}{3}$	240,831.66 $\frac{2}{3}$
Iron	219,537.00	221,217.00	440,754.00	416,531.66 $\frac{2}{3}$
Juab	986,096.00	612,098.00	1,598,194.00	1,223,763.33 $\frac{1}{3}$
Kane	105,520.00	296,658.00	402,178.00	272,715.00
Millard	214,110.00	662,561.00	876,671.00	989,460.00
Morgan	384,660.00	112,627.00	497,287.00	506,770.00
Pi Ute.....	78,142.00	243,394.00	321,536.00	267,501.66 $\frac{2}{3}$
Rich	228,619.00	210,026.00	438,645.00	437,233.33 $\frac{1}{3}$
Salt Lake	15,299,538.66	5,430,748.00	20,730,286.66	18,556,970.00
San Juan	375.00	263,694.00	264,069.00	341,203.33 $\frac{1}{3}$
San Pete.....	1,203,380.00	564,622.00	1,768,002.00	1,659,758.33 $\frac{1}{3}$
Sevier.....	423,575.00	386,911.00	810,486.00	658,828.33 $\frac{1}{3}$
Summit	1,146,498.32	910,443.24	2,056,941.56	1,950,000.00
Tooele	504,874.00	713,131.00	1,218,005.00	1,338,610.00
Uintah.....	86,233.00	246,083.00	332,316.00	279,185.00
Utah.....	3,626,866.00	810,000.00	4,436,866.00	4,295,531.66 $\frac{2}{3}$
Wasatch	420,682.00	247,718.00	668,400.00	564,868.33 $\frac{1}{3}$
Washington	327,345.00	348,482.00	675,827.00	639,356.66 $\frac{2}{3}$
Weber	3,656,954.00	1,564,895.00	5,221,849.00	4,619,100.00
Total	35,925,725.48	15,750,855.24	51,917,312.38 $\frac{2}{3}$	47,065,656.66 $\frac{2}{3}$

*No return.

Increase over 1888, \$4,851,656, or 13 per cent.

SETTLEMENT OF THE PUBLIC LANDS.

The disposition and settlement of the public lands in Utah Territory, and the statement of the total business of the land office at Salt Lake City from the time of its opening in March, 1869, to the end of the fiscal year ending June 30, 1888, is shown in the following table:

	Number.	Acreage.	Amount.
Cash entry.....	3,297	323,829.25	\$490,654.50
Mineral entry.....	1,460	12,268.29	61,605.00
Mineral applications.....	1,713	1,443.00	15,580.00
Desert applications.....	2,573	508,338.61	129,546.49
Desert final.....	478	80,914.07	80,914.07
Homestead entry.....	8,157	10,002,998.44	128,968.01
Homestead final.....	3,891	532,024.85	21,654.95
Timber culture.....	1,051	127,866.96	12,715.00
Timber final.....	6	660.00	24.00
Adverse claims.....	787	612.05	6,505.00
Pre-emption filings.....	11,056	1,326,520.00	33,168.00
Coal filings.....	856	102,720.00	2,568.00
Central and Union Pacific sections.....		348,282.23	4,273.40
Land warrants.....		23,957.00	615.00
Soldiers' and sailors' scrip.....		13.00	27.00
Agricultural College scrip.....		84,912.04	2,232.00
Valentine scrip.....		440.00	11.00
Chippewa scrip.....		80.00	2.00
Supreme court.....		4,360.02	
Timber sold.....			127.08
Timber depredations.....			12,632.59
Testimony fees.....			5,689.56
Coal cash entries.....		7,510,678.33	139,482.02
Stumpage.....			2,788.72
Total.....		20,992,918.14	1,151,783.39

Report of the business of the United States Land Office at Salt Lake City, Utah, during the fiscal year ending June 30, 1889.

Kind of entry.	Number.	Acreage.	Amount.
Cash entries.....	163	12,578.73	\$23,507.89
Mineral entries.....	98	900.6703	4,550.00
Mineral applications.....	75	948.8985	750.00
Desert applications.....	216	50,489.98	14,262.46
Desert final entries.....	73	12,322.96	12,322.96
Homestead entries.....	288	4,185.45	4,677.00
Homestead final entries.....	196	28,131.41	1,230.00
Timber-culture entries.....	200	24,745.27	2,449.00
Timber-culture final entries.....	1	120.00	4.00
Adverse mining claims.....	11		110.00
Pre-emption filings.....	345	45,422.70	1,035.00
Coal filings.....	125	20,000.00	375.00
Coal cash entries.....	4	560.87	9,617.40
Testimony.....			1,461.67
Soldiers' and sailors' scrip.....			3
Union and Central Pacific Railways' selections.....			134.64
Total.....	1,795	200,406.9388	76,487.05

	Acres.
Total area surveyed in Utah to June 30, 1889.....	12,339,931.19
Total area surveyed and approved during fiscal year ending June 30, 1889.....	259,489.38

LIVE STOCK.

Statement showing the number of horses, cattle, and sheep assessed in Utah Territory for the year 1889.

Counties.	Horses.	Cattle.	Sheep.
Beaver	1,866	4,917	32,950
Box Elder	4,220	10,849	74,521
Cache	5,057	9,243	4,234
Davis	2,346	4,456	897
Emery	2,544	12,342	99,293
Garfield	2,059	8,418	16,026
Iron	1,738	6,867	26,312
Juab	2,350	3,645	148,900
Kane	2,312	8,202	77,879
Millard	3,607	4,875	121,555
Morgan	1,066	3,107	937
Pi Ute	2,105	7,323	43,229
Rich	2,542	11,756	5,651
Salt Lake	5,032	6,226	10,862
San Juan	780	22,054	6,300
San Pete	5,186	9,364	45,800
Sevier	3,415	8,622	53,708
Summit	2,689	9,480	602
Tooele	3,854	4,790	237,620
Uintah	6,671	2,851	16,875
Utah	6,740	13,192	69,525
Wasatch	1,958	10,614	17,147
Washington	1,686	9,041	15,100
Weber	3,900	7,333	2,190
Total	75,723	199,567	1,128,113

The above statement represents about 50 per cent. of the total number of horses, cattle, and sheep in the Territory. In some counties it probably does not give more than 40 per cent. of the total number.

During the past few years the people have given more attention to the improvement of live stock. They have imported a large number of thoroughbred animals. The exhibition made of these animals at the agricultural fair held in Salt Lake City this fall was equal in point of general excellence to any exhibit made at a similar exhibition in the West.

Wool clip for 1889 (estimated) pounds.. 11,000,000
 Estimated number of sheep shipped and driven from the Territory 225,000

THE UNOCCUPIED PUBLIC LANDS.

The question of what the Government should do with the vast tracts of land which can only be used for grazing purposes is assuming vital importance throughout the West, and is directly associated with the problem of a cheap food supply.

Under the present conditions these unoccupied lands are used by persons engaged in raising horses, cattle, and sheep. There is no harmony of interests among them, and there being no protection afforded by the law in the use of the lands, there is frequent conflict between the clashing interests.

If the Government would provide some way by which the persons engaged in stock-growing could acquire title to the grazing lands which never can be used for agricultural purposes, it would remove one of the most serious drawbacks to the growth of the stock industry, and promote the settlement of the country. The grazing and mountain lands constitute nearly seven-eighths of the entire land area of Utah.

If the Government will classify these lands so that the title can be vested in persons engaged in raising stock, they could adopt measures

to protect the natural forage plants which are now rapidly disappearing and which are their sole dependence for feed for their stock. The proceeds from the sales of these lands should be devoted to increasing the water supply in the respective territories.

MINERAL PRODUCT FOR 1888.

I am indebted to Mr. J. E. Dooly, the cashier of Wells, Fargo & Co.'s bank at Salt Lake City, for the following very valuable and comprehensive statement of the mineral product of the Territory :

Wells, Fargo & Co.'s statement of the mineral product of Utah for 1888.

	Copper.	Lead, unrefined.	Silver.		Gold.	
			In bars.	In base bullion and ores.	In bars.	In bullion and ores.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Ounces.</i>	<i>Ounces.</i>	<i>Ounces.</i>	<i>Ounces.</i>
Germania Lead Works.....	499,250	7,072,700	.....	442,137	.....	2,386
Hanauer Smelter.....	.....	9,882,000	.....	522,550	.....	2,363
Mingo Furnace Co.....	256,519	5,129,100	.....	247,768	.....	2,276
Daly Mining Co.....	.....	1,283,162	856,438	238,311	588	318
Ontario Silver Mining Co.....	.....	1,924,702	1,074,965	930,623	.....	1,058
Silver Reef District.....	.....	.....	263,466	3,000	.....	.....
Other mines and placers.....	.....	.....	1,769	.....	444	.....
Net product bars and base bullion.....	755,763	25,291,664	2,196,638	2,384,389	1,032	8,401
Contents ore shipped.....	.....	18,150,778	.....	1,393,100	.....	4,045
Contents copper, ore, bullion, and matte shipped.....	2,131,047	1,124,715	.....	204,728	.....	408
Totals.....	2,886,816	44,567,157	2,196,638	3,982,217	1,032	12,854

RECAPITULATION.

2,886,816 pounds copper, at 10 cents per pound.....	\$288,681.60
44,567,157 pounds unrefined lead, at \$54 per ton.....	1,203,313.23
6,178,855 ounces fine silver, at \$0.93 $\frac{1}{2}$ per ounce.....	5,787,527.85
13,886 ounces fine gold, at \$20.....	277,720.00
Total export value.....	7,557,242.68

Computing the gold and silver at their mint valuation, and other metals at their value at the sea-board, it would increase the value of the product to \$10,993,781.02.

Comparative statement showing the quantity of the silver and gold contained in base bullion and ores produced in Utah.

Year.	Total silver produced.	Total gold produced.	Silver in ores and bullion.	Gold in ores and base bullion.	Total silver product.	Total gold product.
	<i>Ounces.</i>	<i>Ounces.</i>	<i>Ounces.</i>	<i>Ounces.</i>	<i>Per cent.</i>	<i>Per cent.</i>
1877.....	4,359,703	17,325	2,102,098	11,035	48.2	63.6
1878.....	4,357,328	15,040	2,108,339	10,165	48.3	67.5
1879.....	3,835,047	15,932	1,797,589	5,693	46.8	35.7
1880.....	3,783,566	8,020	1,403,819	2,878	37.1	35.8
1881.....	5,400,101	7,958	2,643,899	2,622	48.9	32.9
1882.....	5,435,444	9,039	2,581,789	5,016	47.3	55.5
1883.....	4,531,763	6,991	2,351,190	5,597	51.8	80.
1884.....	5,669,488	5,530	3,253,984	3,806	57.4	68.8
1885.....	5,972,689	8,903	3,189,576	7,289	53.4	81.8
1886.....	5,918,842	10,577	2,838,263	8,369	47.9	79.1
1887.....	6,161,737	11,387	4,049,273	10,714	65.7	94.
1888.....	6,178,855	13,886	3,982,217	12,854	64.4	92.5

Comparative statement of the value of lead bullion, including silver and gold necessarily produced in its manufacture west of the Missouri River.

[Compiled from the annual reports issued by John J. Valentine, vice-president and general manager Wells, Fargo & Co., San Francisco.]

Year.	Total value of precious metals including lead.	Total value of lead bullion including gold and silver contents.	Per cent. of entire product.
1878	\$81, 154, 622	\$14, 740, 581	18. 1
1879	75, 349, 501	19, 234, 394	25. 5
1880	80, 167, 936	28, 114, 564	35.
1881	84, 504, 417	30, 253, 430	35. 8
1882	92, 411, 835	35, 798, 750	38. 7
1883	90, 313, 612	34, 810, 022	38. 5
1884	84, 975, 954	31, 191, 250	36. 7
1885	90, 181, 260	35, 731, 711	39. 6
1886	103, 011, 761	44, 635, 655	43. 3
1887	104, 645, 959	41, 595, 853	39. 7

The metals, lead, silver and gold are obtained in small quantities in almost all the productive mines located in this inter-mountain region. The ores are mostly low grade, and the assimilation of the metals, causes the process of smelting to be the favorite and most economical method of reduction. This fact will explain the increase in the percentage of gold and silver produced in the manufacture of base bullion. It demonstrates conclusively, that any legislation, having for its object the repeal of the present tariff on lead, or the placing of the product of lead or lead ores on the free list, must diminish its production, and decrease in the same ratio the gold and silver product of the United States. This injury to our great mining industry is augmented by the action of the Treasury Department in admitting foreign ores (notably from Mexico) free of duty under a strained and doubtful interpretation of the present laws.

It will be seen that 64.4 per cent. of the silver and 92.5 per cent. of the gold produced in Utah is obtained by smelting or in the reduction of lead ores.

The mining industry has been generally prosperous. Several new and important developments have been made in Park City and in other mining camps. It is the opinion of the miners that there would be a great increase in the mineral product were it not for what they believe to be an erroneous construction of the law relative to the admission of lead ores by the Treasury Department.

LIST OF UTAH MINERALS.

An adequate idea may be formed of the generous manner in which nature has lavished her treasures upon Utah from the following statement of minerals found in the Territory:

Precious metals.

Gold.—Occurs in placers at Bingham, and in lead, copper, and silver mines in various parts of the Territory.

Silver.—Native wire silver, silver glance, brittle, horn, and ruby silver occur in the different mines, mixed with lead, iron, and copper ores.

Other metals.

Antimony.—Has been mined at Marysvale, and occurs in lead-silver ores in the form of sulphuret.

Arsenic.—This occurs as mispickel in lead-silver ores.

Copper.—Native copper occurs at Tintic and many other places. Various forms are found, such as carbonate, azurite, and malachite. Silicate and pyrite of copper are found in the mines of Tintic, in central Utah, in the Wasatch Mountains, and on the western border.

Iron.—This is very abundant throughout. In Iron County there are several million tons of hematite, magnetite, and lemonite running over 60 per cent. metallic iron, occurring in one locality. At Tintic there is a large body of hematite, with some ilmenite. In various parts of the Territory there are large deposits of oxides of iron of all shades, valuable for paints.

Nearly all the forms of iron occur in our lead-silver and copper-silver ores.

Lead is the most abundant metal in the mines. It is most commonly found as galena, though anglesite and wulfenite occurs. Lead is found in almost every mining camp in the Territory, and is the chief source of all the precious metals. Were the production of lead to become unprofitable nearly all the mining in the Territory would cease.

Manganese.—This occurs in several places. In central Utah there is a large bed that will doubtless become very useful in making manganese iron.

Mercury.—Cinnabar occurs near Camp Floyd and at Marysvale, where it has been made into metallic mercury.

Molybdenum occurs in ores.

Zinc blende occurs in many ores, and is often a troublesome element.

Miscellaneous.

Coal exists in vast quantities along the east side of the coal range and on both sides of the Uintahs, from the northern limit to Arizona. It belongs to the Cretaceous age. Some of the veins are 40 feet thick. Some veins make a fair quality of coke, and are being utilized now.

Building stone of every grade, from the finest quartzose granite, marble, limestone, and sandstones of every grade and hue, are abundant and accessible.

Salt occurs both as rock-salt and as a part of the Great Salt Lake. Unlimited quantities can be produced annually.

Sulphur occurs at Cove Creek and in the mountains in seemingly inexhaustible quantities.

Alum is found in many localities.

Asbestos also occurs.

Asphaltum also occurs in many places in vast deposits or lakes. *Ozocerite* occurs at Colton in small seams. *Uintahite* (gilsonite) is found in a 4-foot vein near the Uinta Reservation and now supplies the world with Japan varnish. *Elaterite*, a closely allied product, is also found in a large vein on the Reservation. *Petroleum* occurs at Green River, and gives indication of being valuable.

Cement.—There are several places where there is a natural Portland cement.

Fire clay is found in many places.

Gems are found, such as topaz, garnet, chalcedony, amethyst, etc.

Graphite is found in paying quantities in three places.

Gypsum occurs in endless quantities; also alabaster and silenite.

Kaolin is found of very pure quality and would make very fine ware.

Lithograph stone occurs in several places.

Mica is abundant, and in a few places valuable.

Obsidian occurs abundantly in the volcanic regions.

Saltpeter is found in several places.

Silica of a quality to make the finest glass is abundant.

Slate, good for mantels, is found at Utah Lake.

Tripoli of fine quantity is mined near Salt Lake City and on the promontory.

PUBLIC BUILDINGS.

Utah has no public buildings for the use of the Federal offices. There is urgent need of such a building to be located at Salt Lake City. The total amount paid for rents would pay the interest on a very large sum of money, say, \$250,000. It would, therefore, be a measure of economy on the part of the Government to erect a suitable building at once, as the rents will increase annually and the land become more valuable.

There is another very strong reason why Congress should provide for such a building. Many of our citizens come to Utah without having seen anything of the country or learning anything of the Government, except what may be learned during a hurried trip across the continent. They reach Utah and see massive buildings erected by private enterprises, but nothing which in any way represents the Government. It seems to me it would be a most valuable object lesson to them if the Government would erect a magnificent building. It would give them some idea, at least, of the dignity and power of the Government, and would reflect credit upon the Government. The different Federal offices are now scattered all over the city.

Old capitol building.—The old capitol building, erected at Fillmore, Utah, the former seat of government, at a cost of \$25,000, is now used for mission-school purposes. I recommend that it be sold or granted to the Territory for school purposes.

Penitentiary.—At the last session of Congress an appropriation of \$95,000 was made for the erection of new buildings at the Utah Penitentiary. For some reason the money has not been applied to the purpose for which it was granted.

The present accommodations at the penitentiary are insufficient, and the new buildings should be erected as soon as possible.

I recommend that Congress provide that persons imprisoned in the Utah Penitentiary be put to work. The system of punishment which provides food, clothing, and shelter, to able-bodied men, and frequently leaves their wives and children to suffer, does not commend itself to humane persons. If the prisoners were kept at work their earnings could be applied, after deducting the cost of maintaining them, to the support of those dependent on them, if any, or retained for them until their terms of imprisonment would expire.

Industrial Home.—A large, commodious, and attractive-looking building has been erected by the Government at a cost of nearly \$50,000. This building was provided for by Congress in response to a philanthropic movement of the Christian women of Utah to establish an industrial home for women who renounce polygamy, and their children of tender age.

Deseret University.—In connection with the university there is now being erected a Deaf-Mute Institute.

Reform School.—The Reform School building has just been completed at an expense of \$75,000, and will be opened on October 31 of this year. It has been furnished with suitable furniture and everything requisite to meet the demands that may be made upon it.

Agricultural College.—The erection of a college building was commenced in June last, and will be finished about November 15 of this year, at a cost of \$25,000.

The services of an experienced gentleman have been secured to take charge of the college and of the agricultural experiment station to be conducted in connection with it. It promises to be one of the most useful of the Territorial institutions.

Insane Asylum.—This institution, located at Provo, is crowded with patients far beyond its capacity. It is confidently expected that the new legislative assembly will provide for additional accommodations.

Capitol grounds.—The \$25,000 appropriated for the purpose of improving the land granted to the Territory by the city of Salt Lake as a site for the proposed capitol building has been expended in placing an iron fence around the land and in running ditches and flumes and reservoirs to secure a water supply.

Agricultural exposition building.—This building was completed last year, and has been used for agricultural fair purposes. The fair held this year was highly creditable and very successful.

IRRIGATION.

The present year has been an unusually dry one. The farmers in many parts of the Territory have not been able to raise more than one-half of the usual amount of grain, vegetables, etc., and the question of the water supply has become of vital interest to the people. During the month of August last the committee of the United States Senate appointed to investigate the subject of irrigation and the facilities for storing water for the reclamation of the arid lands visited Utah and were in session for two days in Salt Lake City.

The people of the Territory were deeply interested in the visit of the committee, and, through the efforts of the county courts and many of the citizens, a complete statement was prepared of the actual condition of the water supply and the opportunities.

There was also filed with the committee maps showing the location of settlements, streams, and the places especially adapted as sites for reservoirs. This very valuable information was given to the committee and will be made a feature of their report. The following statistical statement will convey a very fair idea of the extent of the interests dependent upon irrigation in Utah:

Statistics of irrigation in Utah as reported for the year 1889.

County	Area in acres.	Acres under cultivation.	Acres that could be cultivated from present canals.	Acres that could be cultivated from new canals.	Depth of snow in mountains, in feet.	Irrigation season begins.	Irrigation season ends.	Elevation above the sea in feet.
Beaver	1,689,600	9,500	14,250	150,000	8	May 15..	Aug. 15.	5,000 to 6,000
Box Elder	2,767,360	53,280	.....	133,480	.....	.....	.....	4,300 to 5,700
Cache	633,600	43,154	73,327	116,607	3	May 1..	Sept. 1..	4,533
Davis	160,000	26,413	46,263	.....	4	April ...	October.	4,215 to 5,000
Emery	5,603,680	14,825	29,200	372,620	4	March ...	Nov.	3,900 to 4,500
Garfield	2,892,800	5,000	1,400	15,950	.....	Apr. 15	Aug. 1..	5,835 to 6,275
Iron	2,102,400	6,997	15,650	161,900	4½	Apr. 1..	Nov. 1..	5,419 to 6,100
Juab	2,457,600	4,000	.....	100,000	.....	.....	.....	5,000 to 5,500
Kane	2,659,200	1,825	2,450	13,350	.....	Apr. 1..	Oct. 1..	.....
Millard	4,492,800	13,500	.....	200,000	3	Apr. 15.	Aug. 15.	5,000 to 6,000
Morgan	675,840	10,000	.....	.....	5	May 20.	Sept. 1..	5,500
Piute	2,368,000	12,135	14,535	16,500	4½	Mar. 20.	Sept. 10.	5,400 to 7,000
Rich	497,280	40,811	119,965	.....	4½	Apr. 1..	Aug. 15.	6,000 to 6,422
Salt Lake	614,400	38,587	.....	89,087	6	May 15	Sept. 15.	4,215 to 4,500
San Juan	5,809,920	6,025	.....	600,000	.....	.....	.....	5,000
San Pete	1,164,800	3,200	6,900	.....	6	May 15.	Sept. 1..	5,500
Sevier	993,280	25,000	35,650	100,000	.....	April ...	October.	6,000
Summit	2,419,200	7,500	.....	15,000	.....	.....	.....	6,000
Tooele	4,140,800	6,250	12,500	200,000	3	.....	.....	4,400 to 5,500
Uintah	4,000,000	8,932	.....	66,229	6	April ...	October.	4,400 to 5,000
Utah	1,344,000	69,126	.....	225,540	4	.....	.....	4,600 to 4,800
Wasatch	1,344,000	18,000	.....	32,000	.....	.....	.....	6,000 to 7,500
Washington	1,649,920	8,892	.....	18,900	6	April ...	October.	2,700 to 3,400
Weber	3,360,000	117,600	.....	143,100	2	.....	.....	4,315 to 5,000

Statistics of irrigation in Utah as reported for the year 1889—Continued.

County.	Acres of crops raised.	Duty of water per cubic foot per second.		Number of cubic feet per second flowing in streams in irrigating season.	Canals.					
		Acres sandy soil.	Acres clayey soil.		Miles.	Number.	Acres controlled by—			
							Companies.	County.	City.	Private rights.
Beaver.....						45				
Box Elder.....	Meadows..... 3,210				76	12				
Cache.....				420.13	110.5	40				
Davis.....	Lucerne..... 11,069				30	19				
	Small grain..... 7,766									
	Other..... 4,073									
	Orchards..... 2,237									
	Vegetables..... 2,955									
Emery.....				171.13		34				
Garfield.....	Lucerne..... 120									
	Small grain..... 2,725									
	Roots..... 705									
	Hay..... 350									
Iron.....		80 to 100	100	67.63		9				
Juab.....							3,500			500
Kane.....		37½ to 100	50 to 150	31		9				
Millard.....							11,000		800	1,700
Morgan.....			100		109	46				
Piute.....				217						
Rich.....		60		605	145.4	25				
Salt Lake.....	Lucerne..... 13,668	85	100	365.5 to 425.5	213.8	37	23,600		9,800	14,950
	Hay, etc..... 2,215									
	Small grain..... 13,566									
	Vegetables, etc..... 3,470.5									
	Orchards..... 1,678.5									
San Juan.....				7.33			400			625
San Pete.....		90	100							
Sevier.....	Lucerne..... 2,634			100	107.5	11				
	Hay..... 2,225									
	Small grain..... 1,982									
	Vegetables..... 710									
	Orchards..... 178									
Summit.....					40			15	10	
Tooele.....			80	78.25						
Utah.....				308	66.2	16				
Wasatch.....					145					
Washington.....		20	40	191.8						
Weber.....				323.66		25		80	30	Rest

Statistics of irrigation in Utah as reported for the year 1889—Continued.

County.	Excess of water.	Acres of crops lost.	Amount of water that could be stored.	Reservoir sites.				Number times land irrigated during season.	Number hours land is irrigated each time.
				Number.	Location.	Elevation in feet.	Acres that could be irrigated by them.		
Beaver			Very much.	25	{ 9 in valley 16 in mountains.	6,000 } 8,000 }	17,000	{ 8	24
Box Elder				5	Valleys..... {	4,300 } 6,000 }	1,000		
Cache		14,385		Many				8	4
Davis				Several					
Emery				15	Mountains.....		13,690		
Garfield.....				4	do		15,000	6	5
Iron.....	None			14	do		700	6	5
Juab	None			Several					
Kane.....		Many		9			7,000	8	12
Millard.....	2 p. c.	1,000	1	10				4 to 5	
Morgan	None	1,000						6 to 8	
Piute.....		400		10	{ 1 in valley 9 in mountain ..	5,400 } 7,000 to 9,000 }	10,000	5 to 6	8
Rich				20	Valleys.....	6,000 to 7,000	77,810		
Salt Lake				15	{ Valley..... Mountains.....	4,500 } 9,000 }	53,400 } 133,400 }		
San Juan				Many					
San Pete		600		2			120	5	24
Sevier.....				6					
Summit				Many					
Tooele				Several					
Uintah		970		do			Many		
Utah.....		28,985		34			6,000	8	
Wasatch		50 p. c.		5			14,000		
Washington.....	Much	33½ p.c.						16	3
Weber				Several					

Where no details are given no report has been received.

In connection with the subject of irrigation a brief statement of the work proposed to be done by the "Bear Lake and River Water-Works and Irrigation Company" may prove of interest.

This company, organized under the laws of Utah, proposes to construct a mammoth system of head works, conduits, and canals, by means of which the waters of Bear Lake, Bear, Ogden, and Weber Rivers in Utah are to be diverted and distributed to cities, towns, and farms for municipal and domestic use. The lands which will be tributary to the canal will exceed 250,000 acres. Some of this land is equal to the finest in the Territory for agricultural purposes; in fact nearly all of the land is remarkably fertile. The cost of the canal when completed will probably exceed \$2,000,000.

The influence of this vast enterprise on the section of country through which it runs and the Territory, if successful, can hardly be overestimated. It will transform thousands of acres of arid land into garden spots, and will enable many thousands of people to find comfortable homes.

It is a most important enterprise for the Territory, and ought to be successful.

The board of directors are representative men. The organization of the company was accomplished by the energy and enterprise of Mr. John R. Bothwell.

PUBLIC AND DENOMINATIONAL SCHOOLS.

Under the provisions of the Edmunds-Tucker law the Territorial superintendent of public schools is appointed by the supreme court of the Territory. He is required by law to make an annual report to Congress, and to give in his report detailed information respecting the schools. I shall therefore only refer to the subject in a general way.

The importance of free public schools and an efficient public school system in which the youth may be educated is universally recognized.

While Utah has a very fair system of public schools, they fall far short of what they should be. The tax collected for the support of the schools does not pay one-half the expenses of maintaining the schools; consequently the pupils must pay tuition fees or the schools be closed. In many of the poorer districts the children are denied school privileges for many months of the year.

There is little prospect—in fact there is no prospect—that this will be changed. I am led to this conclusion by the fact that the Mormon people, with almost entire unanimity, are quietly preparing for denominational schools, in which their children may be taught Mormon theology in addition to the ordinary branches of education.

State or county academies have been established under church auspices, and in some of the school districts the Mormon children have been withdrawn from the public schools and placed in church schools.

The following extract from a letter written by Wilford Woodruff, the president of the Mormon Church, shows very clearly the object and purpose of establishing these church schools:

We feel that the time has arrived when the proper education of our children should be taken in hand by us as a people. Religious training is practically excluded from the public schools. The perusal of books we value as divine records is forbidden. Our children, if left to the training they receive in these schools, will grow up entirely ignorant of those principles of salvation for which the Latter-day Saints have made so many sacrifices. To permit this condition of things to exist among us would be criminal. The desire is universally expressed by all thinking people in the church that we should have schools where the Bible, the Book of Mormon, and the Book of Doctrine and Covenants can be used as text-books, and where the principles of our religion may form part of the teaching of the schools.

It is very plain that the church has decided to take its place as an enemy of the public school system and the principles which are its foundation. The remedy for such an evil is obvious. Congress should at once place the control of the public schools in the hands of those who are disposed to be friendly to the public school system. If the Mormon Church leaders are determined to oppose these schools by establishing denominational schools, their power and influence should be destroyed so far as the administration of school affairs is concerned, and this can only be done by taking the management and control of these schools out of the hands of its members. The free public school has justly been regarded as one of the strongest pillars which supports our political fabric, and it is a strange perversity which prompts the dominant power in Utah, in this age of enlightenment and progress, to attempt to break it down.

The different denominations had, in Utah, for the year ending June 30, 1889, the following schools :

Denomination.	1889.			1888.		
	No. of schools.	No. of teachers.	No. of pupils.	No. of schools.	No. of teachers.	No. of pupils.
Baptist	2	3	150	2	3	140
Catholic	6	50	900	7	50	1,000
Congregational	24	48	2,490	22	38	1,883
Methodist	21	35	1,396	20	61	1,649
Presbyterian	32	62	2,150	33	61	1,925
Protestant Episcopal	6	27	800	5	22	800
Swedish Lutheran	2	5	75	1	3	45
Total	93	230	7,961	90	238	7,442

Of the 2,490 scholars enrolled in the Congregational schools, 1,035 were the children of Mormon parents ; of the 1,396 scholars enrolled in the Methodist schools, 291 were the children of Mormon parents.

Bishop Abiel Leonard, of the Episcopal Church, in his report says :

I am persuaded that the religious schools planted in this Territory have done very much to bring about the change in public sentiment as to the bounden duty which rests upon every true man to uphold the Government of the United States, and to compel respect to the laws enacted by the highest legislative authority. The work of our schools is not yet completed, but I believe the day is not distant, especially in the larger towns, when we may feel that our mission in sustaining free schools has passed.

It is but a small tribute to the unselfish work of the various denominations to say that they have performed a great work in promoting the emancipation of the people of Utah, and that they have supplied a need that could be met in no other way ; and yet I can not but feel that the presence of the denominational school is not consistent with the principles upon which our Government rests. I believe the non-Mormons in Utah will welcome the day when they will give way before the rise of a free public school system.

THE SCHOOL LANDS.

Congress has set apart sections 16 and 36 in each township of land for the use of the public schools, and the land has been located. These lands are situated in Rich, Cache, Salt Lake, Tooele, Utah, Juab, San Pete, Sevier, and Pi Ute Counties.

Land without water is of but little use in Utah, and as the water supply has all been appropriated, the school lands are comparatively worthless.

The total amount of the grant is 46,080 acres, which, at the rate of \$1.25 per acre, would realize \$57,600. The amount may reach \$75,000, but I do not believe it is adequate for the great purpose which the Government had in view when it made the grant.

I believe it would be a wise act on the part of Congress to increase the grant.

INDIANS.

So far as I have been able to learn, the Indians on the Uintah and Uncompahgre Reservations in northeastern Utah (Uintah County) are

contented, and give but little cause of complaint, if any, to the agent in charge.

The only serious difficulty known has been occasioned by the Uncompahgre Indians leaving the reservation to hunt in the mountains of Colorado during the season for deer hunting, which can only be prevented by United States troops scouring the country. These Utes were removed to Utah in 1882, and claim, so I am informed, that they are not now located on the land set apart for them under the treaty ratified by Congress, and which is situated at the junction of the Gunnison and Grand Rivers. They claim the right to hunt on this land and say it belongs to them. Some of the Uintah Indians are engaged in agriculture, raising stock, etc., and are fairly prosperous. The territory occupied by these Indians is equal to the most fertile in Utah, and there is no good reason why they should not be made self supporting.

There are about 1,500 in the Territory, exclusive of those on the two reservations. They are chiefly Piutes and Shoshones, though there are some Pah Vants, Piedes, and Utes. Most of them exist by begging and by spasmodic attempts at hunting and fishing. They lack spirit and are uncared for; they greatly need schools and missionaries, and to be taught how to take care of themselves and to till the soil.

The Government does little, if anything, for them. The squaws do most of the drudgery. In Tooele County there are 350 to 400 Indians, Goship Shoshones, who, though poor, are far better off than most Indians. They do a little farming, are anxious to own their land, and to be taught. Those at Deep Creek are much better off, and partly civilized.

In Millard County, on the edge of Nevada, there are a few very industrious Indians, but there are white settlers who steal their water, and the Indians are in danger of being driven out by them. They are entitled to and should receive some protection from the Government.

In San Pete County there are 115 Indians, Utes, who recognize no tribal relations. They own their own land, own stock, have houses, live at Indianola, in Thistle Valley, and are doing well. I am informed that they are being taught polygamy by the Mormon missionary who lives with them.

In Garfield County there are about 50 Indians, mostly in Potato and Panguitch Valleys.

In Sevier County there are 100 Indians in Grass and Rabbit Valleys who are totally neglected.

In Kane County there are about 100 Indians. I am informed they practice polygamy. They are poor, and earn a precarious livelihood by making ditches, chopping wood, farming a little, etc., and hunting.

In Iron County there are from 150 to 175 Indians who are destitute.

In San Juan there are about 100 Indians, part genuine Utes and part Moancoppy. They live by the chase and begging.

In other counties small bands of Indians may be found, who, like most of the Indians not on the reservations, have abandoned their tribal relations. They are objects of pity, and their numbers are being rapidly reduced by disease. The Government ought to provide for them in some way.

REMOVAL OF THE COLORADO UTES TO UTAH.

A determined effort is now being made by prominent men of Colorado to have the Utes now located in southern Colorado removed to Utah. A commission was appointed to select a place and they chose San Juan

County, Utah. Their action was reported to Congress, but was not ratified. From information which I have received I am led to believe that the proposed removal will work, not only a hardship to the Indians, but a great injustice to many deserving settlers who have made themselves homes, and have built up large business interests in the locality which it is now proposed to turn over to the Indians to satisfy the selfish demands of the people of another State.

These settlers have vested rights and should receive just and equitable consideration by Congress. The people of Utah are almost unanimously opposed to the bringing of these Indians to the Territory. I append to this report a letter which I have received from F. A. Hammond, the probate judge of San Juan County, which presents the case of the settlers very clearly and pointedly.

The proposed treaty should not be ratified, and I enter a protest against it on behalf of the people of this Territory.

BUSINESS PROSPERITY.

During the past year the people have enjoyed unusual prosperity, the influence of which has been felt all over the Territory. In the principal cities and counties there has been phenomenal prosperity. Property has rapidly advanced in value and business has correspondingly increased. In Salt Lake City and Ogden a large number of new and valuable buildings have been erected. There has been a constant tide of emigration pouring into these two cities, enough to effect in Ogden a complete political revolution. The people of this rapidly growing city are active, persevering, and industrious, and deserve the success which has come to them.

It is expected that a like political revolution will take place at the municipal election to be held in Salt Lake City in February next. If this result is accomplished it will be because of the vigorous new element which is making its presence felt in the city and is putting new life into all the avenues of business.

The growing prosperity of the Territory has attracted the attention of capitalists who reside in other States and Territories. They are investing very largely in property, and are assisting in the development of our wonderful resources. Though there are many jarring interests in Utah, caused by the different habits and opinions of its inhabitants with respect to its material welfare, there seems to be a general feeling of unanimity.

There is no more inviting field for the capitalist than is Utah. There are vast possibilities in the fields of industrial enterprise which are only waiting to bring wealth to those who develop them. Utah is rich in all of the material resources which tend to make a country great and powerful. There is no good reason why it should not enjoy for many years to come the stimulating influence of the swelling tide of prosperity which is now rolling over the Territory.

The climate is unsurpassed, the material resources are unlimited, and life and property are perfectly safe.

These are conditions which ought to enable Utah to take her place in the march which the great West is making to future empire.

BANK STATEMENT.

I have received from the following-named banks the following statement of their business on June 30, 1889:

Name.	Capital.	Deposits.	Increase of deposits.
			<i>Per cent.</i>
Commercial National, Ogden.....	\$150,000	\$364,673.50	70
Deseret National, Salt Lake	250,000	1,566,379.91	40
First National, Ogden.....	100,000	541,662.91	61
First National, Provo.....	50,000	154,000.00	50
J. W. Guthrie, Corinne.....	50,000	18,210.00	8
Thatcher Bros., Logan.....	100,000	97,196.18	(*)
Union National Bank, Salt Lake.....	400,000	985,461.53	25
Utah National, Ogden.....	100,000	415,000.00	35
Wells, Fargo & Co., Salt Lake†.....	200,000	1,200,000.00	35
Zion's Saving Bank, Salt Lake.....	100,000	539,629.58	(‡)
Total	1,500,000	5,882,213.61	.....

* First year.

† The Salt Lake branch of Wells, Fargo & Co. has no capital, but draws on the parent bank at San Francisco. The \$200,000 given is surplus.

‡ Not given.

THE RAILROAD SYSTEM.

The railroad system of Utah is herewith given:

Road.	From—	To—	Miles of line.	
			Gauge 4 feet 8½ inches.	Gauge 3 feet.
Union Pacific:				
Main line in Utah	Ogden	Wyoming line.....	73	.....
Utah Central.....	do	Frisco	280	.....
Salt Lake and Western.....	Lehi City	Silver City	57	.....
Echo and Park City	Echo	Park City	31	.....
Utah and Nevada.....	Salt Lake City.....	Terminus.....		37
Utah and Northern.....	Ogden	Idaho line		76
Utah and Eastern	Coalville.....	Park City		27
Total Union Pacific.....			441	140
Denver and Rio Grande Western:				
Main line in Utah.....	Colorado line	Ogden		310 ¹ / ₁₀
Bingham branch.....	Bingham Junction.....	Bingham		16 ³ / ₁₀
Little Cottonwood.....	do	Alta		18 ² / ₁₀
Pleasant Valley	Pleasant Valley Junction.....	Coal mines.....		17 ³ / ₁₀
Coal mines.....				6 ¹ / ₁₀
Total Denver and Rio Grande Western.....				368
Central Pacific in Utah.....	Ogden	Nevada line	157	.....
San Pete Valley	Nephi	Chester.....		34
Salt Lake and Fort Douglas.....	Salt Lake.....	Fort Douglas		6
Salt Lake and Park City.....	do	Park City		12
Grand total.....			598	560

The Denver and Rio Grande Railway is now changing its line from narrow to broad or standard gauge. The total number of miles changed will be 345, at a contemplated cost of \$7,500,000, and it is expected the work will be completed about January 1, 1890. The widening of the gauge between Salt Lake and Ogden is now completed.

The Salt Lake and Fort Douglas Railway now being constructed will connect Salt Lake City with the important mining town of Park City, and will prove of great importance in developing a very interesting and valuable tract of country.

A company has been formed to build a railroad from Sioux City, Iowa, to Ogden and Salt Lake City, in Utah. Contracts have been let for grading, and it is expected the road will soon be in successful operation.

A company has also been formed to build a road from Salt Lake City to Evanston, Wyo., tapping the coal-fields in Chalk Creek. It is claimed that the coal in Chalk Creek is of a superior quality and can be mined very cheaply; it is proposed to continue the road from Salt Lake City to the Nevada State line, and ultimately to the coast.

Freight classification for twelve months of 1888 and 1889. shipped over the Union Pacific Lines in Utah (not including Utah and Nevada Railway).

Commodities.	Pounds.	Commodities.	Pounds.
Ore and matte.....	72,399,032	Rock	872,428
Lumber	37,499,028	Poultry.....	40,000
Grain.....	11,251,982	Charcoal.....	208,270
Green fruit and vegetables.....	9,454,473	Posts	400,230
Coke	3,401,040	Sulphur	3,423,988
Live stock.....	16,026,700	Copper bullion	146,763
Building material.....	8,711,743	Water	2,292,300
Coal.....	111,266,751	Junk	48,400
Railway material.....	4,379,960	Flour and mill stuffs.....	2,340,080
Lucerne seed.....	1,181,988	Oil.....	225,260
Wool and hides.....	6,154,602	Tan bark	795,320
Limestone	24,495,255	Hay and straw.....	2,761,607
Machinery and implements.....	925,007	Salt	32,850,414
Beer.....	766,290	Sulphate of soda	617,250
Slag	3,574,085	Sundries.....	5,741,671
Bullion	9,030,215	Groceries	4,200,890
Slack	348,069	Merchandise	39,287,571
Granite rock.....	2,981,050		
Dried fruit	202,472	Total	420,302,184

Statement of freight commodities shipped over the Rio Grande Western Railway for the twelve months ending June 30, 1889.

Commodities.	Tons.	Commodities.	Tons.
Products of agriculture:		Products of forest—lumber.....	13,944
Grain	4,252	Manufactures:	
Flour.....	1,042	Petroleum and other oils	2,480
Other mill products.....	573	Sugar	6,954
Hay	1,558	Iron, pig and bloom.....	232
Fruits and vegetables	4,324	Iron and steel rails	3,773
Canned goods.....	5,113	Other castings and machinery.....	1,562
Products of animals:		Bar and sheet metal	1,155
Live stock.....	5,368	Cement, brick, and lime.....	3,148
Dressed meats.....	127	Agricultural implements	319
Other packing-house products.....	836	Wagons, carriages, tools, etc.....	1,088
Wool	1,431	Wines, liquors, and beers	789
Hides and leather.....	128	Household goods and furniture....	1,290
Products of mines:		Merchandise	22,912
Anthracite coal.....	8,585½	Miscellaneous, other commodities not	
Bituminous coal.....	167,024	mentioned above—powder, salt, etc..	5,112½
Coke and charcoal.....	18,371		
Ores.....	51,159	Total tonnage	353,469
Stone, sand, and other articles	12,083		
Bullion.....	6,736		

Statement of freight traffic movement over Utah and Nevada Railway, July 1, 1888, to June 30, 1889.

Commodities.	Tons.	Commodities.	Tons.
Grain.....	459	Iron and hardware	131
Flour.....	148	Castings and machinery.....	184
Hay	115	Cement, brick, and lime	145
Live stock.....	22	Agricultural implements	4
Wool	102	Wagons, carriages, tools, etc	14
Bituminous coal.....	3, 670	Salt and soda	3, 304
Ores	5, 856	Merchandise	475
Bullion	1	Ice	418
Lumber.....	533	Miscellaneous	321
Ties	426		
Posts and poles.....	49	Total	16, 474
Sugar.....	37		

THE LABOR SUPPLY.

The number of men belonging to the trades-unions in Salt Lake City, is as follows :

Members of trades-unions, federated	810
Members of trades-unions, not federated	515
Trades labor men not of trades-unions.....	900

In Ogden :

Members of trades-unions federated	350
Members of trades-unions not federated.....	135

The number of persons engaged in skilled and unskilled labor throughout the Territory I am unable to learn, and can give no estimate, having no data to base such an estimate upon.

The number of skilled laborers is now about equal to the demand, excepting carpenters, brick and stone masons. The last-named trades are about 15 per cent. short of the actual demand.

The supply in other branches is about equal to the demand. All skilled laborers can readily obtain work in Salt Lake City and Ogden.

The following table will show the rate of wages paid for certain kinds of labor and the hours employed :

Occupation.	Wages per day.	Hours per day.
Bricklayers.....	\$4.50 to \$5.50	9
Carpenters	2.75 to 3.50	10
Blacksmiths.....	3.50 to 4.00	10
Hod carriers.....	2.50	9
Laborers.....	1.50 to 2.00	9
Painters	3.00 to 3.50	9
Plasterers	4.00 to 4.50	9
Printers	*18.00 to *25.00	9
Plumbers.....	3.50 to 4.00	9
Stone-cutters.....	4.00 to 4.50	9
Stone-masons.....	4.50 to 5.50	9
Tinners.....	3.50 to 4.00	9

* Per week.

PISCICULTURE IN UTAH.

For a number of years past the Government has been engaged in the free distribution of various kinds of fish, every State and Territory being the beneficiary. The first fish received in Utah were German carp,

and the number received since the first distribution, in 1883, is as follows:

1883	1,800	1887	23,372
1884	4,000	1888	11,420
1885	8,500	1889	*9,640
1886	11,160		

Nearly all these carp were put into private ponds—artificially prepared—by the applicants from every county in Utah, except Uintah and San Juan.

Carp have also been planted in the following waters, as follows:

Sevier River	500	Weber River	1,000
Spanish Fork	500	Bear River	1,000
Beaver River	500	Draper Canal	500
Jordan River	1,000	Scipio Lake	500

In the month of June, 1887, 1,000,000 shad fry were planted in the Jordan River. In 1888, 2,000,000 shad fry were placed in the Utah Lake. In November, of 1888, a shad of the last planting was caught which had made very rapid growth, being about 6 inches long. This shad was expressed to the U. S. Fish Commissioner, at Washington, D. C., at his request.

Further consignments of shad and white fish have been promised, which will be put into Bear Lake, from which they will find their way to Bear River and its tributaries into Wyoming, Idaho, and Utah.

NEW APPORTIONMENT.

At the election for members of the legislative assembly, in August last, the total vote cast was:

For councilors.

Mormon	14,161
Gentile	6,136
Scattering	199
Total	20,496

For representatives.

Mormon	14,192
Gentile	6,054
Scattering	66
Total	20,312

This was the second election held under the apportionment made by the governor, secretary, and members of the Utah Commission under the provisions of section 22 of the Edmunds-Tucker act. The apportionment was made in the spring of 1887, and was based on the returns of the National Census of 1880.

It is now seen that many counties have outgrown this apportionment, and do not receive the representation which their population entitles them to. In the third council district (Weber County) 2,638 votes were cast, 12.3 per cent. of the total vote. In the twelfth council district (Iron, Garfield, Kane, Washington, and San Juan Counties) 969 votes were cast, 4.2 per cent. of the total vote, a difference in the vote of two districts, having equal representation, of over 8 per cent. of the total vote.

*Applied for.

The six council districts which represent the most populous and prosperous portions of the Territory cast 12,100 votes; the remaining six, 8,127 votes.

A like inequality is found to exist in the votes cast in the representative districts. In the fourth district (Ogden City) 1,665 votes were cast, while in the twenty-third district (Iron and Garfield Counties and part of San Juan County) but 395 votes were cast, a difference in the vote of two districts having equal representation of nearly 8 per cent. of the total vote. I therefore deem it important and necessary that Congress should authorize a new apportionment to be made immediately after the taking of the next national census, and by the same Federal agency.

CERTAIN OFFICERS TO BE APPOINTED BY FEDERAL AUTHORITY.

There is an imperative necessity for some action that will help to build up a population in sympathy with the Government in those parts of Utah where a Gentile is as much a stranger as he would be were he in a foreign land. A great many people have apostatized from the Mormon Church; by so doing they have deprived themselves of all association with their Mormon neighbors, and experience has shown that when a man becomes an apostate, as a rule, he leaves the Territory. Thousands have apostatized who would now, had they remained, be a power in the Territory. Among the reasons which they give for leaving the Territory are these: They say they were socially ostracized; they were made to pay taxes on a larger proportionate assessment than their neighbors; that they were deprived of the means of obtaining a livelihood, etc.

It is of vital importance that something be done to keep them in the Territory, and if they can be made to feel that the officials will deal with them fairly they will probably do so.

Some Federal agency should be authorized to appoint the following county officers: Selectmen, clerks, recorders, superintendents of district schools, and assessors.

THE SITUATION.

Recent events of a political and business nature which have transpired in the Territory during the past year have led many people to believe, especially outside of Utah, that a marvelous change has taken place, and the downfall of Mormon domination practically assured.

If this were true the need of Federal supervision over the political and social affairs of the Territory would no longer exist. I am forced to express the opinion that it is not true, and feel that I will be performing a grateful duty if I can give the facts concerning the Utah of to-day, in such shape and form as to enable Congress and the country to form clear opinions concerning them. It must seem strange to many that public officers in official political reports constantly intermingle political and church affairs, and in considering the importance and effect of political action, refer to contemporaneous action of church officials as interpreters of the acts, when in this country church and state are separated by law, and in political discussions religious beliefs are almost a prohibited subject.

If the change referred to has taken place it means—

First. That the non-Mormons are now in the majority, and control in political and business matters; or,

Second. That the Mormon Church has ceased to sanction violations of law, and the people have abandoned their hostility to the Government and its laws.

The Gentile strength.—The facts are that at the last municipal election the Gentiles carried the city of Ogden by 433 majority. Six months later an election was held throughout the Territory for members of the legislative assembly. The Gentiles elected 2 of the 12 members of the council and 6 of the 24 members of the house. At this election the Gentiles again carried Ogden, and also carried Salt Lake City by 41 majority. These notable victories awakened the wildest enthusiasm, and were hailed with delight by the people of the country, and many expressed the opinion that the Mormon power was at an end in Utah.

I regret to say they were in error. The time may come when the Gentiles will be in the majority, but it will be many years hence. The facts are that outside of Salt Lake City and Ogden the Gentile population is found in the mining camps and in the small railroad cities and towns. They are principally settled and engaged in mercantile and professional business. In Salt Lake City and Ogden they own more than one-half of the real property. As a rule they do not own or occupy any of the agricultural lands, and are not engaged in agriculture.

The strict Mormons regard the invasion of Utah soil by Gentiles somewhat as the Crusaders regarded the occupancy of the Holy Land by the Saracens, and are advised by their leaders not to sell their lands to Gentiles.

In 23 of the 24 counties, and in 256 of the 278 election precincts the Gentiles were in the minority at the last election. The great bulk of the population of Utah is and always will be in the valleys. The agricultural lands lie in the valleys and comprise a very small part of the whole. The total land and water area of Utah is 54,380,000 acres. From reports made to me by the county courts, it seems that not more than 500,000 acres were under cultivation during the present year. Probably 500,000 acres more could be brought into cultivation if some way were provided to store the surplus water during the wet season. Nearly all the land under cultivation, and the water that can be used to irrigate it without great expense, is owned and appropriated by the Mormons, and as they hold and own the land and water, they hold and own Utah.

That this is so is shown by the fact that they have been sending out colonies into the States and Territories adjoining Utah. This is an overflow, and in this they do not go singly, as settlers usually do, but the neighborhood where they intend to settle is explored, a few families sent, to be followed by others, and a colony established, and exclusive occupation taken so far as they go and so far as such occupation is possible. In this way they have colonized Utah, and with the aid of assisted immigration have acquired the agricultural lands, and appropriated the waters which can be easily reached to irrigate them.

While it can not be denied that progress is being made, and more rapidly, too, than at any previous time in the history of the Territory, it will be seen that those who are of the opinion that Utah has passed from under the Mormon power are mistaken.

The present attitude of the Mormon people.—In passing to the consideration of the question whether the Mormons have ceased to enforce the doctrine of plural marriage and have abandoned their well-known hostility to such Federal laws as are in conflict with what they claim to be religious belief, let us look at the character of the Mormon people and their leaders.

The early Mormons were mainly native Americans and religious enthusiasts. Under a vigorous system of proselyting by missionaries they have been largely recruited from all parts of the world. Either by chance or from policy their missionaries have mostly been to the parts of the country where the average rate of intelligence is the lowest, and they made many converts either of American birth or from those of foreign birth who had first settled elsewhere in the United States. For a long time the bulk of their converts have come from the lower classes of England and Scandinavian countries, and they are yearly brought over by ship-loads. Their missionaries say nothing of plural marriage, and some converts hear of it for the first time when they reach Utah. They are picked up by process of "natural selection;" the doctrine as expounded by the missionary fits the mental condition of the convert. He is told of the new and wondrous revelation, the intercourse with and guidance of spirits and angels; the power to work miracles, heal the sick, and cure the deformed; that God has not only taken this chosen people under his care, but has given them a fine country, where every one can have fertile land, the association of a brotherhood of equals, and separation from the wickedness and oppression of the world. The doctrine thus put forth by shrewd leaders is accepted by the illogical and those who give credence to the marvelous, to miracles, the portents of dreams, and those in whom the imagination is not controlled by strict methods of reasoning.

The hopes of a better worldly condition and the offer of aid to reach it are not without effect. They are not without intelligence sufficient to utilize their general experience in practical affairs; they are industrious in a slow, plodding way, frugal and easily governed. A firm religious enthusiasm is their leading characteristic. As a rule they are law-abiding, especially as far as the law is confirmed by the priesthood, but they accept the doctrine of plural marriage in all sincerity and as a radical and necessary part of their religion, and any civil law punishing polygamy and kindred offenses as crimes, is considered wrong.

They have accepted the doctrine of polygamy and will probably adhere to it as long as they live, and it is but a very poor tribute to their honesty to say they have abandoned it. The women are as devotional as the men, probably more so. An intelligent woman probably expressed the sentiment of her sex in regard to polygamy, by saying: "It is a cross, but I suppose it is true, and we must bear it."

While the Mormon masses are too sincere to voluntarily make false pretenses, they could be induced to accept and adopt any form of words, however contradictory, if advised to do so by their authorities, for obedience to the priesthood and to obey counsel is diligently inculcated as a first duty, and should they be told to sign a declaration they were Mohammedans and that the priesthood understood the matter and it was for the advancement of the cause and the glory of God, they would probably do it.

In other communities every man feels a consciousness of personal equality and independence and personal responsibility, and a strong love of country as against everything else. In Utah, among the Mormons this is not the case. That instinctive love of country which is the distinguishing characteristic of the American people does not find a responsive sentiment in Utah. The orthodox Mormon, in every political and business act puts the church first, the country afterwards. It can not be otherwise for the priesthood claim all government but its own to be illegal, and claim a "separate political destiny and ultimate temporal dominion, and by divine right."

Of political and official Mormonism, I can only say it is probably sincere. There is insincerity, but it is not the rule. It is illogical to suppose such a body can be substantially held together on any theory of combination to support what they consider a mere imposture. It may as well be understood that the strength of Mormonism, both in its masses and officials is in its sincerity and not in its imposture. In official Mormonism there may be some insincerity but not enough to affect the question, and it may use its position for selfish ends. But this can be done by force of the position, and as well if it be sincere as if it be insincere, as human nature is not changed by the kind of church it enters.

A fair degree of sincerity is the only virtue I can ascribe to political and official Mormonism. When it has any point to attain in behalf of Mormonism it deals in evasions, meaningless words or words of double meaning, hypocritical pretenses, false assertions, and every helpful evasion of word or act. Its attitude in regard to the status of the Mormon people in regard to polygamy is delusive to the last degree. It knows there is no material change of opinion on the subject; but it seeks to convey the idea that there has been. It will not come out with a clear apprehension on the subject; but seeks and uses evasive expressions, intended to convey the idea abroad that the declaration has been made, and it is irritated when something express and definite is asked. The position it assumes is this: We have numbers and wealth sufficient to be released from Federal control. There formerly was opposition in the Territory to the law against polygamy, but see the present loyal attitude of our people. They have taken the registration oath; have put in their proposed constitution a condemnation of polygamy as a crime. What more can you ask? If the express question is put, Do you and your people still believe that polygamy is right and the doctrine one of divine origin? the answer is evasive. It will be at once said, You should not inquire into our religious views; those are mere opinions; and so long as we swear loyalty to the laws and offer you this constitution, and thus fulfill all proper political conditions, you have no right to intermingle church and state and ask our religious views, or suspect the bad faith of what we have sworn. When other Territories have applied for admission, and given you the evidence that they have fulfilled all political conditions, you did not enter upon an unconstitutional inquiry concerning the religious belief of its inhabitants, and how can you in our case? We demand statehood as a right always accorded when political conditions are fulfilled.

This sophism, accompanied by suggestions of oppression, unjust prosecutions, agitation against them for the sake of plunder, and that there is no Utah question because polygamous marriages have ceased, entangles many who can only give the question a passing thought, and they are apt to think there are really two sides to the question.

No Territory has ever applied for statehood or release from any measure of Federal control with the great body of its people devoted to social crimes, and firmly believing such crimes are either commanded or permitted by revelation, and no Christian church has ever taught any such doctrine, so that Congress has never had occasion to enter upon any such inquiry.

In regard to the political affairs of Utah, one side claims that the inquiry as to the loyalty of the people to the laws of their country is a proper political inquiry. The other side claims that this is bringing in a religious discussion, and you have no business with a religious belief. There is such a wide difference in the use of terms that a harmonious conclusion is impossible.

One example will illustrate the distinction, and show the agitation of the question is not, as asserted, the work of jealous priests or rapacious laymen. The Josephite Mormons are understood to accept all the doctrines of Mormonism, except the revelation concerning polygamy, which they have claimed is a forgery, and they have intermingled with other religious denominations in the States and Territories undisturbed and enjoying all the immunities and privileges of law-abiding citizens. They have not withdrawn by themselves, organized crime, sanctified it to the people by revelation, and called it religion; hence there is no political discussion concerning their belief.

At one time it was thought the Josephite doctrine might be an important factor in Utah, but its influence has been crippled by the later proof that at Nauvoo, in the life-time of Joseph Smith, polygamy was practiced by the leaders, and that men could and did marry two women by one ceremony. Until the proof was made, and perhaps it was permitted to come out to meet the growing influence of the Josephites and their assertion that the revelation was a forgery concocted in Utah, the Mormons had persistently denied they were guilty of any violation of law, and were driven out without excuse, at the instigation of priests and for plunder, though there are still living in Utah those who practiced polygamy at Nauvoo. The incident shows mendacity and deceit are not new characteristics of orthodox Mormonism.

The last official expression of the Mormon people with regard to polygamy, other than the proposed State constitution, was made May 2, 1885, and is as follows:

As to our religious faith, it is based upon evidence which to our minds is conclusive; convictions not to be destroyed by legislative enactments or judicial decisions. Force may enslave the body, but it can not convince the mind. To yield at the demand of the legislature or judge the rights of conscience would prove us recreant to every duty we owe to God and man. Among the principles of our religion is that of immediate revelations from God; one of the doctrines so revealed is celestial or plural marriage, for which ostensibly we are stigmatized and hated. This is a vital part of our religion, the decisions of courts to the contrary notwithstanding.

This candid admission of their position is as true to-day as when it was first made, and expresses the situation at this time. Some young Mormons, probably 140, at the late election broke away from the ancient discipline and voted as they pleased. I hope the number will be increased at the next election. In that way the church is losing a few adherents on the outer side, but there is no change in the position of the leaders, and the sincere Mormons will never renounce polygamy until they are convinced that God has commanded them to do so, and they will, whenever they have the power, enforce and practice polygamy, and every other interest of the church, whether it conflicts with law or not, and will believe that in doing so they are serving the divine will, and will gladly accept any punishment which may come to them because of this in the spirit of martyrs.

This fact stands out very clearly. There has been no change in the doctrines of the church or its teaching, and it will not do to claim they have assumed a loyal attitude because they refuse to sanction violations of law. They must teach their people that the law is supreme, and cease to honor those who violate it.

The claim is made that the church does not now interfere in political matters, but, like all other religious organizations, leaves its members free to act for themselves.

The Gentiles claim that the past and the present history of the church does not support this claim; that the church is a political organization with aims that are political, and that it manifests greater zeal in pre-

serving and perpetuating its political power than in promoting the religious purposes for which it was ostensibly organized.

They call attention to the fact that the money which it collects from its people as tithing, under the plea of religious duty, is mainly used in promoting political ends in and out of the Territory, and notably at Washington City, the capital of the nation.

The Mormon people are constantly advised to be united in their temporal and spiritual matters. This advice does not come from the laymen, but is given from the pulpit. A union of temporal and spiritual affairs means that the people must be "obedient to counsel," and the "counsel" always emanates from the high priesthood.

The non-Mormons are amazed that the fact of the church interfering in political matters should be denied. Every apostate Mormon in the Territory bears willing testimony to the fact, and the acts of the Mormon leaders confirm it. At the last legislative election there was a contest in the ninth council district between two Mormons, one the candidate of the Mormon party, and one who ran as an independent candidate, and whose candidacy was a protest against the political methods of the Mormon church. In a letter received from a prominent citizen of the district occurs the following statement:

Apostle John Henry Smith made his appearance in our county on Friday the 2d instant (August, 1889). The people at Huntington were drummed together on said evening, and Smith called their attention to the fact that he was an apostle of the Church of Jesus Christ of Latter-day Saints; that they had chosen and sustained him in that position, and had covenanted to sustain him as their counselor and adviser, and he now wished them to thoroughly know and understand he was there to see and to counsel and advise and persuade all to sustain the People's (Mormon) ticket.

In Davis County at the same election there was a contest between two Mormons for the office of selectman; one nominated by the People's Party, the other as an independent candidate. A prominent citizen of the county, and an official, in a letter makes the following statement:

I had the pleasure of listening to him (George Q. Cannon) the last day of the meeting. He dwelt wholly upon politics, and among other things said: "Now, brethren, you will shortly have an election here (referring to the county election), and how will you act—after the order of the world to stir up strife and contention, or will you do it after the order of God, and elect the men whom God wants?" That sermon, with a visit from Penrose, editor of the Deseret News, settled the election. If you will turn to the election returns from Davis County you will see David Stoker was run for selectman by the Liberals. The priesthood prevented his election.

Another well-known citizen of Davis County makes substantially the same statement, with the further statement that it occurred at a "priesthood meeting," and that "on election day teachers were delegated to see that every one of the People's party (Mormon) voted the straight ticket."

I submit these statements for consideration in connection with the assertion that the church does not interfere in political matters, but leaves its members to act for themselves, and will only state that Mr. Cannon is not a member of any committee of the People's party, and had no other relation to the people of Davis County than that given by his official position as an apostle of the church.

If a member of the church acts independently of the People's party, he is made to understand in a very pronounced way that he has displeased the church; that he has taken a step which is wrong, and is frequently declared to be "an enemy of his people." The result has been that few men have had the courage to avail themselves of the opportunity to be independent under such circumstances. While there are many Mormons who would gladly welcome some action on the part of the church abandoning polygamy and remanding the church to its

appropriate sphere as a religious organization, the greater number still adhere to the old faith with all its teachings and practices. The church and people stand to-day where they stood when the first colony was planted in the Salt Lake Valley. In conversation with a Mormon member of the legislative assembly on this subject, he said to me, "Well, this is God's work; if it is right it will go ahead; if it is wrong it will not; it is in his hands and he will take care of it." This probably expresses the opinion of the orthodox Mormon.

It will now be seen why political officers in political reports refer to church doctrines and practices. It is because they involve the body of the people and are disloyal and hostile to the laws, and hence the subject becomes in the strictest sense political. In fact, the church doctrines and their practices are so intimately interwoven with the political affairs of Utah that they can not be considered separately.

RECOMMENDATIONS.

Elsewhere in the report I have recommended that the public schools be placed under the control and authority of some Federal agency; that certain county officers be made appointable by some Federal authority; that a new legislative apportionment be made after the taking of the next census, and that prisoners confined in the penitentiary be placed at work.

I believe it is the intention of the American people to extirpate polygamy and its kindred evils from their land, and that Congress is determined to give force and effect to this intention by appropriate legislation. The reports made by previous governors of the Territory, and by the Utah Commission, recommend special measures for consideration by Congress, all of which, so far as they are now essential, have my hearty indorsement and support. Encouraging Gentile immigration has been suggested. The walls are up against it, unless a great increase in mining, the establishment of manufacturing on a large scale, or the founding and enlargement of industrial pursuits other than agriculture take place. The founding, example, and teaching of Christian churches has been recommended. Several denominations have established churches, but the converts from Mormonism are none too numerous. There is a self-sufficient complacency in the Mormon that entirely satisfies him with his religion. Establish schools throughout the Territory, others say. This has been done to some extent by various religious denominations, but the progress is slow in producing any marked result. It has been suggested that the courts should be increased and offenses vigorously prosecuted. The Government has been for years well represented by able and efficient officers, and the result has been important, but not decisive. This course has not changed opinion, but has caused greater care in concealing offenses.

Officers have great difficulty in making arrests in the agricultural districts, and are forced to find out the residence of the person wanted, approach and surround his house in the night, or come upon him at some unexpected hour of the day; and at times, after getting in sight of the man, ability as a hurdle racer is more serviceable in making the arrest than their warrant or official character. If they run down their man, and return to his house, the witnesses wanted have disappeared and inquiries made of men, women, or children are met with a universal "don't know." If the witness is placed on the stand, and questioned as to facts of recent occurrence, his mind is a blank. Mothers have frequently testified that they did not know their daughters were married, and when asked if the fact of the daughter having children did not at

least excite some interest as to the fact of marriage, the answer would be, "It was none of my business," or "My daughter is old enough to take care of herself." Members of the priesthood have denied facts while on the stand which were notoriously known to be true.

Others suggest the taking of all political power from the church, and call attention to the fact that this power is used by the church to strengthen the position of the leaders socially, politically, and financially. They point with emphasis to the fact that the most lucrative county offices in the Territory are continued in certain families, descending, like the priesthood, by inheritance, from father to son, to the exclusion of the "common people," and also say that a high position in the priesthood is generally accompanied by an equally high position in the political and business world, secured by church influence, until religion, politics, and business are so intermingled that it is difficult to draw the line where the one begins and the other ends, and this will continue to be so until the strong hand of the Federal Government is interposed to force an effectual divorce of church and state.

The suggestion to strip the church of political power is met by the objection that it is an attempt to punish the Mormon people for their religious views, and because of this is unconstitutional.

In a discussion of this character we must be careful that both sides understand and employ terms in the same sense; otherwise the discussion will run on lines so far apart that no definite result or understanding can be reached. It is well here to see what is meant by religious belief and unconstitutional inquiry about religious belief and church affairs and doctrines. In this country, under constitutional guaranties, it is impossible for the law to encroach upon the domain of religion while the latter keeps within its true boundaries; but if a religious sect can adopt and practice something prohibited by law and claim immunity on account of religious belief, it may, or other sects may, extend religious belief and practices to cover the whole domain of criminal law, and crimes and religion would become synonymous terms. The Mormons believe in and practice polygamy, and claim it is justified by revelation, and therefore a part of their religion. The United States punishes the offense and calls it a crime, and what the Government calls *crime* the Mormon Church calls *religion*—claims immunity for it as a religious belief, and to that extent swallows up the domain of the law.

I believe the great majority of the people will welcome any change that will end the long struggle, which has only brought sorrow and suffering to them, while their leaders have enjoyed plenty and apparent immunity from punishment because of wealth and position. With them it is not a question of political power. They care nothing for the offices, but they do want peace, and if they were left alone would have peace.

I recognize, however, how serious the situation is, and how much is involved in the duty of changing the attitude of a perfectly disciplined host. I do not care to interpose any suggestions beyond echoing the voice of the loyal people here, which insists that what is unlawful in the Mormon system must be extirpated, that there must be no relaxation; on the contrary, should the present laws prove inadequate, and the Mormon people continue in their present attitude, then the Government should not hesitate to provide some form of government for the Territory which will be patriotic and wise enough to do what is right.

In my opinion, expressing to the Government my best judgment, which it is entitled to and should have, I do not hesitate to say that

any temporizing policy which leaves the church in a position to control the political policy of the Territory is only delaying the final settlement, and that future legislation should be aimed at the political power of the church, which has been the main pillar of its strength in Utah.

In the mean time it will be seen that the Utah problem is wholly new in America and not so easily solved as those unacquainted with all the facts might suppose, and its laterals reach to the mooted questions of unrestricted immigration, cheap citizenship, and whether in this country personal rights have not been hedged so closely that at times public danger may ensue.

In conclusion, I desire to say that so far as I have been able to learn the Federal officers in Utah are performing their duties faithfully and efficiently. The courts and district attorney are enforcing the laws with vigor. The election laws have been ably enforced by the Utah Commission. I take this opportunity to say that the presence of the commission and its work have been of material aid to the government.

I am, sir, very respectfully,

ARTHUR L. THOMAS,
Governor.

Hon. JOHN W. NOBLE,
Secretary of the Interior,
Washington, D. C.

BLUFF, SAN JUAN COUNTY, UTAH, *September 9, 1889.*

SIR: Your favor of the 31st of July is received. It reads as follows:

Will you kindly furnish to me for use in my annual report, to be made to the Secretary of the Interior, a statement with reference to the condition of the Indians now in San Juan County; also estimate the number of the same, and the tribe to which they belong, or of which they were formerly a part, together with any suggestions you may have to make regarding the same.

I am, very respectfully,

ARTHUR L. THOMAS,
Governor.

P. S.—I would also be pleased to receive from you a statement respecting the proposed removal of the Colorado Utes at Durango (I believe) to Utah Territory, and its probable effect upon the property of the inhabitants of San Juan County, the number of the inhabitants that will be affected, and the probable effect upon the settlement of the county.

In answer I would respectfully state that there are about one hundred Indians in San Juan County. Part of these are of the genuine Ute tribe. Their home has always been where they are now located, never having belonged to any reservation, and a part from the Moancoppy, in Arizona. Their condition is that of the average mountain Indian in his uncivilized state. They live by the chase and begging. They receive no aid whatever from the General Government.

The leading men of Colorado are making, as you know, an effort to have the Colorado Utes brought to Utah, and they will doubtless be successful unless some steps are taken by the officials of Utah to prevent it.

The probable effect upon the inhabitants of the county embraced within the lines of the proposed reservation means no more nor less than destruction to all their interests, as there would remain no other alternative for them to do than to make new homes elsewhere.

The number of inhabitants that would be affected is thirty families, averaging seven souls to the family. These people possess good claims, with valuable improvements, and they have no disposition to leave their homes unless compelled to by the Government. Besides these there are about sixty cattle men employed by the different companies owning ranches around the Blue and Elk Mountains, in this proposed reservation. There are about 27,000 head of horned stock, 12,000 head of sheep, and about 600 head of horses owned and ranged in this part of the county. There are also about 5,000 head of cattle owned by men in Colorado who range their cattle here during the winter on account of taxes being lower in Utah than in Colorado.

It has cost the settlers from \$3,000 to \$4,000 a year since 1879 to feed the Indians and make presents to them, in order to maintain friendly relations with them. We

had also to purchase the privilege of running stock on the Elk Mountains; the Indians as late as three years ago would not consent to white men's stock ranging there.

Should the Government conclude to remove the Southern Utes to this country and oust the settlers, the Government will receive about 2,500 acres of fenced improved lands, with about 17 miles of canals; also a few fine orchards in full bearing, and a number of acres of lucerne land yielding three good crops a year. One large dwelling house, costing at least \$8,000, located on the northeastern slope of the Blue Mountains; sixty-five log cabins, some rock houses, school-house, store building, shoe-shop, a large number of corrals, with most of the town lots fenced.

On roads we have expended in the county \$27,500, about \$7,000 of which, I think, was appropriated by the Territory. These roads are well located, two of them leading east into Colorado, one from Bluff, and one from Monticello; one from Bluff, 80 miles distant west to the Colorado River, and one from Bluff north to Emery County line, 120 miles.

No mines or minerals of any consequence have been discovered in the region covered by the lines of the proposed reservation, except some placer claims on the east side of the Colorado River, some 80 miles west of Bluff City, claimed by one Case, Hite & Co., but which have never been worked. This company has been operating some four years on the west side of the river, not in this county, and have, so I am told, in the way of a city one rudely constructed house, having a small ditch constructed for the purpose of sluicing out gold. These improvements are on the west side of the Colorado River, but the proposed line of reservation follows the bed of the river.

In conclusion, I would respectfully suggest that the Government act promptly, and either open this region for settlement again (as it was withdrawn last November) and assist the settlers to reclaim this desert land or else take it for reservation purposes. In the event of its being held for reservation purposes, I would suggest that a committee of three be appointed, with power to act, who should repair at once to this region, look over the country the Utes are to leave and the country they are to come to, that they may see and understand fully what the Government is to give and what it is to receive, and determine the value of the settlers' claims. This need not occupy more than twenty days, and thus settle this vexed question, as the settlers can not improve the land in consequence of its having been withdrawn, and they are really in danger because of the restless condition of the Indians, they regarding the white people as trespassers. I would suggest also that good practical western men be sent among these Indians found in San Juan County to teach them how to farm and live as the whites live; and after they have first been taught how to earn their living and become self-sustaining, then, if the Government see fit, let schools be introduced among them.

Yours, respectfully,

F. A. HAMMOND.

P. S.—The canals at Bluff have cost the people \$100,000, and are now in active operation.

F. A. H.

Governor ARTHUR L. THOMAS,
Salt Lake City, Utah.

R E P O R T
OF
THE GOVERNOR OF WASHINGTON TERRITORY.

OLYMPIA, *October* 19, 1889.

SIR: In compliance with your request for a report of the affairs and of the progress and development of the Territory for the year ending June 30, 1889, I have the honor to submit the following:

The closing year of Washington's Territorial existence has been one of unexampled prosperity. Population has increased more rapidly than in any former year. Property valuations have grown proportionally, showing a gain of nearly 50 per cent. Railroad construction has been very active. Business houses, banking institutions, manufacturing establishments have been multiplied throughout the Territory. Sales of land by the Northern Pacific Railroad Company and entries at the various United States land offices have been unprecedentedly large.

Of the great disasters for which this year will be a marked one in history, Washington has had an undue share. The business portions of four cities, Seattle, Vancouver, Ellensburg, and Spokane Falls, were destroyed by fire, involving a loss of not less than \$16,000,000.

These calamities, seriously felt as they are, in no degree threaten the prosperity of the new State. Credit remains unimpaired, abundant capital at easy rates of interest having been offered from the East for rebuilding. Not a word of discouragement is heard, but everywhere there is evidence of renewed energy and ambition.

Under the provisions of an act of Congress, approved February 22, 1889, members of a constitutional convention, chosen by the people, met at Olympia on the 4th day of July and framed a constitution, which was subsequently submitted to and ratified by the people in a general election held October 1, 1889. A proclamation of the President, which will probably be issued early in November, is all that remains to render statehood an accomplished fact. A safe and stable government is assured. Our citizens hail this deliverance from the condition of Territorial vassalage with general rejoicing.

Very respectfully,

MILES C. MOORE,
Governor.

The SECRETARY OF THE INTERIOR,
Washington, D. C.

BOUNDARIES.

Washington Territory was created by an act of Congress, March 2, 1853. It has an approximate area of 66,880 square miles of land surface. The constitution of the State of Washington, article 24, section 1, defines its boundaries as follows :

Beginning at a point in the Pacific Ocean one marine league due west of and opposite the middle of the mouth of the north ship channel of the Columbia River, thence running easterly to and up the middle channel of said river, and where it is divided by islands up the middle of the widest channel thereof to where the forty-sixth parallel of north latitude crosses said river, near the mouth of the Walla Walla River ; thence east on said forty-sixth parallel of latitude to the middle of the main channel of the Shoshone or Snake River, thence follow down the middle of the main channel of Snake River to a point opposite the mouth of the Kooskooskia or Clear Water River, thence due north to the forty-ninth parallel of north latitude, thence west along said forty-ninth parallel of north latitude to the middle of the channel which separates Vancouver's Island from the continent, that is to say, to a point in longitude 123 degrees, 19 minutes, and 15 seconds west, thence following the boundary line between the United States and British possessions through the channel which separates Vancouver's Island from the continent to the termination of the boundary line between the United States and British possessions at a point in the Pacific Ocean equidistant between Bonilla Point on Vancouver's Island and Tatoosh Island light house, thence running in a southerly course and parallel with the coast line, keeping one marine league off shore to place of beginning.

GENERAL DESCRIPTION.

Washington is situated in the extreme northwestern portion of the United States. Its form is that of a parallelogram, 245 miles from north to south and 360 miles from east to west. This parallelogram is bisected by the Cascades, a lofty range of mountains separating it into two distinct climatic divisions, differing widely in topographical features, in vegetation, and in soil. The climate of both is equable, that of the western portion being moist and warm, somewhat resembling that of the south of England, while on the east it is not unlike that of Virginia, the mean temperature at Walla Walla being the same as that of Norfolk. That portion of the Territory lying west of this range is known as western Washington, and embraces about one-third of the total area. Its principal natural divisions are the Puget Sound basin, the Chehalis basin, and the valley of the Lower Columbia and its tributary streams. Between the Pacific Ocean and Puget Sound is the coast range of mountains. Between the coast range and the Cascades lies that wonderful inland sea known as Puget Sound, extending south from the Straits of Fuca 120 miles and having an area of 2,000 square miles. The Columbia River flows along the southern border of the Territory for 250 miles.

Lumber and coal are the principal products of the Puget Sound basin, but it contains numerous rich agricultural valleys, notably the Puyallup, the Stuck, White River, Skagit, Snohomish, Snoqualmie, Duwamish, Stillaguamish and Cedar River.

Eastern Washington is an elevated plateau or rolling prairie region, walled in by mountain spurs and ranges. Numerous valleys with great agricultural capabilities are interspersed. They derive their names from the streams upon which they are situated. Principal among these are the Yakima, the Walla Walla, the Palouse, and the Spokane.

ALTITUDES IN WASHINGTON TERRITORY.

[From a report on Washington Territory, by W. H. Ruffner, L.L. D.]

	Feet.		Feet.
Mount Ranier (Tacoma).....	14,444	Palouse Junction.....	858
Mount Baker.....	10,827	Sprague.....	1,200
Mount Adams.....	9,570	Spokane Falls.....	1,910
Mount St. Helens.....	9,750	Colville.....	1,917
Natchess Pass.....	4,900	Fort Spokane.....	1,300
Stampede Pass, summit.....	3,980	Okinagane Lake.....	1,163
Tunnel, Stampede Pass.....	2,885	Great Plain of Columbia River....	1,000 to 3,000
Snoqualmie Pass.....	3,110	Snake River, Northern Pacific Railroad...	358
Kechelus Lake.....	2,388	Colfax.....	1,941
Kachess Lake.....	2,158	Dayton.....	1,360
Ellensburg.....	1,518	Walla Walla.....	1,000
Yakima City.....	990	Wallula Junction.....	326
Ainsworth.....	351		

POPULATION.

There is appended hereto a statement showing the growth in population of the Territory from 1853, the year of its organization to the present time. The study of this table is instructive, as affording an illustration of the slow growth in population prior to the completion of transcontinental railway lines, and the rapid increase thereafter.

In the two years immediately following the completion of the Northern Pacific Railroad to Puget Sound the population of the Territory has been increased by nearly 100,000, or more than was added during the entire fourteen years preceding. The census returns compiled from the reports of the various county assessors show a population in April of the present year of 239,544. This method of enumeration is not satisfactory and is not regarded as accurate or complete. There is little doubt the present actual population is fully 275,000. The vote at the election for State officers, held October 1, corroborates this estimate.

Immigration continues to pour in at a rapid rate. The growth of some of our towns, notably Spokane Falls, Tacoma, and Seattle, is simply phenomenal, the population of each having apparently doubled in a single year. The most remarkable increase is in the county of King, which in 1887 had a population of 15,972, and in 1889, 40,788, an increase in two years of 24,816. During the same period Pierce County shows an increase of 15,611, having now a total of 27,795; while Spokane shows an increase of 13,885, having now a total of 25,200.

Washington is still sparsely populated. Containing an area of 69,994 square miles, it has a total population of only 239,544, or an average of 3.42 inhabitants to each square mile of territory.

Statement showing abstract of census returns of each county for the year 1889, with total population.

Counties.	Males over twenty-one years.	Females over twenty-one years.	Whites.	Blacks.	Mulattoes.	Kanakas.	Chinese.	Indian half-breeds.	Married.
Adams	583	271	1,842	.....	.....	.....	.....	.....	721
Asotin	429	315	1,449	.....	.....	.....	8	20	557
Chehalis	2,157	2,362	5,619	1	.....	.....	38	.....	2,174
Clallam	610	284	1,526	.....	.....	.....	15	123	626
Clarke	2,396	1,888	8,957	1	.....	.....	26	26	2,926
Columbia .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cowlitz	1,108	653	3,974	.....	.....	.....	.....	.....	1,546
Douglas	994	459	2,633	.....	.....	.....	13	6	531
Franklin	161	76	413	.....	.....	.....	22	.....	132
Garfield	1,116	754	3,771	.....	.....	.....	10	11	1,307
Island	427	208	1,263	.....	.....	.....	.....	85	345
Jefferson	2,043	556	5,226	2	.....	.....	331	181	1,783
King	13,148	6,582	39,822	33	39	.....	422	405	14,574
Kitsap	1,349	502	3,514	46	1	7	74	198	1,308
Kittitas	2,532	1,023	6,953	358	18	1	11	35	2,325
Klickitat .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lewis .....	.....	.....	8,048	11	19	.....	2	127	2,988
Lincoln	2,866	1,394	8,048	5	6	.....	33	23	2,747
Mason	450	250	1,397	.....	.....	.....	1	150	522
Okanogan .....	.....	.....	1,038	.....	.....	.....	.....	22	278
Pacific	957	462	2,831	2	20	.....	150	21	976
Pierce .....	.....	.....	26,882	82	8	42	3	575	9,164
San Juan .....	.....	.....	1,061	.....	.....	1	.....	329	422
Skagit .....	.....	.....	5,984	.....	.....	7	38	89	1,668
Skamania	206	120	538	.....	1	16	6	49	214
Snohomish	2,178	988	5,870	8	13	.....	5	188	2,295
Spokane	9,375	4,501	25,006	92	.....	.....	193	14	9,116
Stevens	947	428	2,417	.....	.....	.....	42	275	885
Thurston	2,262	.....	6,938	17	.....	.....	208	73	2,324
Wahkiakum	532	264	1,402	2	.....	.....	.....	84	564
Walla Walla	6,804	4,503	10,882	13	.....	.....	406	6	4,960
Whatcom	2,430	.....	6,154	4	.....	.....	.....	56	2,043
Whitman	5,836	3,160	15,154	24	.....	.....	103	.....	5,472
Yakima	1,416	725	4,290	54	.....	.....	.....	64	1,453

Statement showing abstract of census returns of each county, etc.—Continued.

Counties.	Single.	Can not read or write.	Can not read or write (over fifteen years).	Deaf, dumb, blind, or insane.	Adults.	Minors.	Aliens over eighteen years.		Total population.
							Males.	Females.	
Adams	1,121	.....	.....	.....	867	975	3	.....	1,842
Asotin	920	.....	.....	1	718	769	.....	10	1,477
Chehalis	4,023	.....	226	8	.....	.....	.....	146	6,238
Clallam	1,038	.....	.....	1	917	747	20	3	1,664
Clarke	6,084	.....	.....	3	4,048	4,962	.....	.....	9,010
Columbia .....	.....	.....	.....	.....	.....	.....	.....	.....	6,035
Cowlitz	2,434	2	1	.....	1,761	2,213	.....	.....	3,974
Douglas	341	22	.....	.....	1,453	1,199	.....	.....	2,652
Franklin	303	.....	.....	.....	267	168	.....	.....	435
Garfield	2,485	.....	.....	2	1,116	1,071	7	1	3,792
Island	499	49	51	.....	918	438	112	15	1,356
Jefferson	3,952	.....	.....	.....	3,900	1,840	1,101	200	5,740
King	10,590	83	42	9	22,673	18,115	2,298	645	40,788
Kitsap	2,630	22	22	.....	2,438	1,545	557	30	3,983
Kittitas	1,644	.....	98	3	.....	4,158	3,372	.....	7,530
Klickitat .....	.....	.....	.....	.....	.....	.....	.....	.....	5,390
Lewis	5,219	.....	.....	.....	.....	.....	.....	.....	8,207
Lincoln	5,368	5	5	.....	4,310	3,805	42	8	8,115
Mason	1,026	.....	.....	.....	800	748	75	25	1,548
Okanogan	782	.....	.....	.....	726	334	.....	.....	1,060
Pacific	2,048	2	2	4	.....	189	10	.....	3,024
Pierce	10,606	.....	182	.....	.....	.....	.....	.....	27,595
San Juan	238	.....	.....	.....	419	.....	218	71	1,410
Skagit	4,443	.....	.....	.....	.....	.....	.....	.....	6,111
Skamania	127	.....	.....	.....	341	269	10	2	610
Snohomish	3,789	4	4	.....	3,779	2,305	31	2	6,084
Spokane	16,093	83	.....	.....	14,636	10,564	475	287	25,200
Stevens	578	4	5	2	1,450	1,284	13	6	2,734
Thurston	1,468	2	.....	4	4,073	3,163	79	.....	7,236
Wahkiakum	924	.....	.....	.....	780	708	60	30	1,489
Walla Walla	6,347	31	.....	4	5,847	5,460	587	44	11,307
Whatcom	4,176	.....	.....	.....	.....	.....	.....	.....	6,219
Whitman	9,809	11	.....	3	9,599	5,682	449	154	15,281
Yakima	2,960	.....	.....	.....	.....	.....	85	8	4,408
Total .....	.....	.....	.....	.....	.....	.....	.....	.....	239,544

Comparative population of the Territory from 1853 to 1889.

1853	3,965	1885	129,292
1870	23,995	1887	143,669
1873	31,037	1889	239,544
1876	40,000		

The fifteen counties east of the Cascade Mountains have a population of 97,258; the nineteen western counties a population of 142,286, showing an excess in the west of 45,028.

Further evidence of the increase in number of the Territory's inhabitants is found in the vote polled in the years named as shown in the following table:

Election years.	Votes cast.	Election years.	Votes cast.
1859	2,778	1880	15,823
1869	5,373	1882	19,498
1870	6,182	1884 (with woman suffrage.)	41,842
1872	7,801	1886 (with woman suffrage.)	47,230
1874	8,594	1888	46,348
1876	9,907	1889	58,543
1878	12,647		

TAXABLE PROPERTY.

The following tables show an extraordinary increase in the amount of taxable property, rising from \$61,562,739 in 1887 to \$124,795,449 in 1889, a gain of more than 100 per cent. in two years. Nothing more clearly demonstrates the substantial progress made by the Territory within the past two years than these figures. The counties showing most marked increase are Spokane, Pierce, and King, in which are situated the cities of Spokane Falls, Tacoma, and Seattle. Growth in values, it will be seen, has more than kept pace with increase in population. The rate of tax levy for the present year is 2½ mills.

Table showing value of all taxable property, number of acres of land assessed, and tax levy for various purposes in the several counties for the year 1889.

Counties.	Value of real estate assessed.	Value of improve- ments thereon.	Value of personal property assessed.	Value of property assessed.	Farm land unim- proved.	Im- proved lands.	Total acreage.
					Acres.	Acres.	
Adams	\$537,605	\$51,367	\$433,329	\$1,022,301	.....	11,244	665,466
Asotin	261,404	75,720	272,899	610,023	66,174	20,831	87,085
Chehalis	1,600,574	203,035	499,935	2,303,544	381,041	6,252	387,293
Clallam	690,131	85,425	95,924	871,480	78,268	3,091	.....
Clarke	1,442,605	491,482	692,266	2,626,353	189,427	21,272	210,699
Columbia	1,815,880	585,970	1,296,490	3,698,350	118,394	87,781	206,175
Cowlitz	654,457	109,117	333,434	1,097,008	232,183	10,178	243,361
Douglas	301,948	21,627	837,255	1,160,830	.....	.....	.....
Franklin	191,591	13,650	435,131	640,372	.....	.....	.....
Garfield	673,035	254,493	635,367	1,562,895	105,370	79,846	185,216
Island	230,679	107,155	205,502	543,336	.....	6,345	105,021
Jefferson	1,578,831	432,976	433,084	1,031,915	.....	1,530	87,073
King	17,588,475	2,344,655	3,800,365	23,504,290	.....	10,861	297,428
Kitsap	277,920	468,520	497,030	1,243,470	87,428	2,928	90,356
Kittitas	1,187,043	342,370	1,120,191	2,649,604	404,504	45,116	449,620
Klickitat	548,745	207,143	1,081,490	1,851,431	.....	8,841	459,455
Lewis	1,050,231	325,658	508,995	1,884,884	376,801	26,163	402,964
Lincoln	1,325,659	296,325	1,384,885	3,006,869	632,604	83,870	716,474
Mason	562,563	218,430	205,264	986,257	50,000	1,500	227,505
Okanogan	61,300	.....	437,798	502,098	.....	.....	.....
Pacific	374,284	122,390	394,445	891,119	122,814	718	123,532
Pierce	17,438,920	1,838,492	2,872,100	26,356,514	.....	.....	332,620
San Juan	140,293	131,353	107,444	379,090	44,308	4,012	48,320
Skagit	977,906	232,804	522,320	1,733,030	75,692	18,086	168,008
Skamania	49,757	35,275	73,023	158,055	17,633	1,072	18,705
Snohomish	1,110,140	213,109	287,673	1,610,922	220,197	12,709	232,906
Spokane	10,468,256	1,671,063	2,992,609	15,131,928	645,165	85,331	730,496
Stevens	273,004	65,438	348,556	634,819	81,331	3,304	84,635
Thurston	1,459,704	455,100	722,562	2,637,366	.....	.....	.....
Wahkiakum	205,075	120,070	224,008	516,572	71,399	3,267	74,666
Walla Walla	1,355,720	2,053,680	2,482,835	7,892,235	211,971	185,275	564,275
Whatcom	3,034,420	85,035	180,545	3,300,000	127,113	5,843	144,881
Whitman	4,177,308	828,179	2,864,741	7,870,228	556,755	209,716	766,471
Yakima	1,626,528	373,696	820,040	2,826,261	.....	.....	.....
Total.....	67,274,991	14,860,812	30,129,535	124,795,449	.....	.....	.....

Table showing value of all taxable property, etc.—Continued.

Counties.	Tax levy for Terri- torial purposes.	Tax levy for mili- tary pur- poses.	Tax levy for county purposes.	Tax levy for school purposes.	Tax levy for roads and bridges.	Tax levy for special purposes.	Tax levy for poll and road poll.	Total tax levy.
Adams	\$2,555.75	\$204.64	\$8,462.79	\$4,089.20	.....	.....	.....	\$15,312.38
Asotin	1,516.06	121.28	4,865.78	3,649.34	\$608.22	.....	.....	11,828.68
Chehalis	5,758.86	460.71	18,428.35	13,821.26	4,607.09	.....	\$4,722.00	52,405.36
Clallam	2,178.20	174.30	6,971.84	3,485.92	2,014.44	\$87.15	1,634.00	17,146.35
Clarke	6,565.88	525.27	13,131.76	15,759.11	5,252.70	2,626.35	7,740.00	51,601.07
Columbia	9,245.85	739.67	14,793.36	14,793.36	3,698.34	3,968.34	1,700.00	48,668.92
Cowlitz	2,742.52	219.40	8,876.06	5,485.04	2,194.02	.....	.....	21,611.06
Douglas	2,902.07	232.17	9,286.64	4,643.32	1,160.83	.....	5,964.00	18,225.03
Franklin	1,600.93	128.07	5,122.97	1,921.12	.....	1,921.12	.....	10,694.21
Garfield	3,907.24	312.58	12,503.16	7,814.47	.....	.....	3,125.79	27,653.23
Island	1,358.33	108.66	4,346.69	2,717.67	543.33	162.77	632.00	11,227.00
Jefferson	5,079.78	406.38	16,255.32	8,127.66	4,000.00	2,000.00	4,800.00	40,669.14
Kitsap	3,108.68	248.69	9,947.76	5,595.62	1,865.21	.....	380.00	21,145.96
Kittitass	6,624.01	529.92	2,196.83	13,248.02	2,649.60	2,649.60	5,229.20	52,197.18
Klickitat	4,628.58	370.29	14,811.48	9,257.16	1,851.43	370.29	9,257.16	40,546.39
Lewis	4,712.21	376.97	13,194.19	11,309.30	11,309.30	.....	8,772.00	49,673.97
Lincoln	7,517.17	601.37	24,054.95	18,041.21	1,503.43	.....	.....	51,718.13
Mason	2,465.64	197.25	7,890.06	5,917.57	1,975.51	2,958.77	822.00	22,223.77
Pacific	22,227.79	178.22	7,128.95	3,564.47	4,010.03	.....	.....	.....
San Juan	947.72	75.80	2,274.54	2,274.54	785.18	.....	.....	6,330.78
Skagit	4,332.57	346.60	13,864.24	6,932.12	3,466.06	.....	5,199.09	34,140.68
Skamania	395.14	31.61	1,264.44	829.79	316.11	39.51	202.00	3,078.60
Snohomish	4,207.30	322.18	12,887.37	8,054.61	2,416.38	161.09	5,960.40	33,829.32
Spokane	36,460.90	2,916.87	58,337.45	43,753.08	21,876.54	3,992.00	6,652.00	173,988.84
Stevens	1,702.04	136.96	5,478.55	4,108.91	3,424.09	.....	3,852.00	18,712.55
Thurston	6,593.42	527.47	17,142.88	9,230.78	2,912.10	263.73	3,024.00	44,694.38
Wahkiakum .....	.....	.....	.....	.....	.....	.....	.....	11,189.14
Walla Walla	19,584.91	1,566.79	35,252.84	31,355.84	7,833.96	7,833.97	2,318.00	105,726.33
Whatcom	8,250.00	600.00	16,252.84	16,500.00	.....	.....	.....	48,850.00
Whitman	19,675.57	1,574.05	62,961.82	43,286.25	15,740.46	.....	.....	143,238.14
Yakami	7,050.65	7,050.65	21,151.95	7,050.65	2,820.26	141.00	2,820.26	41,598.77
Total .....	.....	.....	.....	.....	.....	.....	.....	.....

Assessed value of all property in Washington Territory, by counties, from 1887 to 1889.

Counties.	1889.	1888.	1887.
Adams	\$1,022,301	\$873,251	\$337,817
Asotin	610,023	582,177	533,905
Chehalis	2,303,544	1,803,764	1,503,630
Clallam	871,480	491,352	303,480
Clarke	2,626,353	2,290,970	2,101,205
Columbia	3,698,350	2,825,100	2,487,460
Cowlitz	1,097,008	1,098,330	823,728
Douglas	1,160,830	530,239	256,056
Franklin	640,372	579,676	140,225
Garfield	1,562,895	1,669,180	1,801,922
Island	543,336	460,419	426,989
Jefferson	1,031,915	1,235,950	1,017,795
King	23,504,290	15,016,795	12,437,191
Kitsap	1,243,470	2,305,322	2,141,191
Kittitass	2,649,604	1,032,720	1,011,640
Klickitat	1,851,431	1,746,978	1,481,182
Lewis	1,884,884	1,526,244	1,168,098
Lincoln	3,006,869	2,338,043	2,069,085
Mason	986,257	715,233	553,934
Okanogan	502,098	295,762	.....
Pacific	891,119	756,315	597,105
Pierce	26,356,514	14,021,842	5,882,130
San Juan	379,090	282,293	273,209
Skagit	1,733,030	1,460,601	1,256,012
Skamania	158,055	170,078	142,085
Snohomish	1,610,922	1,299,467	1,052,322
Spokane	15,131,928	7,212,509	3,941,635
Stevens	684,819	383,770	619,141
Thurston	2,637,366	2,136,963	1,807,967
Wahkiakum	516,572	433,303	345,572
Walla Walla	7,892,235	6,754,940	5,192,175
Whatcom	3,300,000	1,134,903	769,479
Whitman	7,870,228	7,084,745	5,105,380
Yakima	2,820,261	2,071,987	1,990,994
Total	124,795,449	84,621,182	61,562,739

Comparative valuations of property for each year from 1879 to 1889.

Year.	Valuation.	Increase.	Decrease.
1879	\$21,021,832		
1880	23,708,587	\$2,687,355	
1881	25,786,415	2,077,828	
1882	32,566,807	6,680,392	
1883	44,107,567	11,538,760	
1884	52,424,992	8,317,425	
1885	51,117,636		\$1,307,356
1886	51,491,159	373,523	
1887	61,562,739	10,071,575	
1888	84,621,182	23,058,442	
1889	124,795,449	40,174,267	

SETTLEMENT OF LANDS.

The total area of Washington is 44,798,160 acres, of which 21,715,258 acres have been surveyed. Of the unsurveyed portion about 7,000,000 acres are embraced in the Coast and Cascade ranges of mountains. This portion, being rugged and broken, is for the most part unsuitable for settlement. The remaining 15,000,000 acres should be surveyed without delay.

The rapid influx of population emphasizes the necessity for immediate action. Settlement by pre-emption can be made prior to survey, but settlers are averse to this method, as it frequently leads to confusion and uncertainty regarding boundaries and delay in acquiring title. The cost of surveying in the Puget Sound region, which is everywhere heavily timbered and covered with a rank growth of underbrush, is very great. The prices heretofore allowed by the Government have been notoriously insufficient.

The area of arable land in the prairie country east of the mountains is rapidly diminishing. In fact, no considerable portion now remains available for homestead and pre-emption except that which requires irrigation. There is, consequently, an increased demand for land in the timbered region bordering Puget Sound and in the vicinity of Gray's Harbor. This is indicated by the extraordinary business of the Seattle United States land office, 826,491 acres having been entered there under the various acts during the year ended June 30, 1889. A table below shows the entries at the various land offices throughout the Territory during the year.

Land entered at the various land offices throughout the Territory for the year ending June 30, 1889.

Locality of office.	Original homestead entries.	Timber-culture entries.	Timber-land entries.	Final and cash entries.	Pre-emption filings.	Coal-land entries.	Desert-land entries.
North Yakima ..	54,030.29	43,303.78	.....	44,023.18	106,560.00	.....	2,151.24
Seattle	223,131.77	.....	278,240.00	113,894.01	325,120.00	.....	.....
Spokane Falls...	93,159.63	38,227.66	.....	88,937.89	81,964.82	.....	.....
Vancouver ...	77,798.29	1,353.35	.....	109,079.80	74,060.86	12,381.22	.....
Walla Walla ...	39,290.00	35,095.00	.....	51,267.00	39,800.00	.....	.....
Total	487,409.98	117,979.79	278,240.00	407,201.88	527,505.68	12,381.22	2,151.24
Total for 1889	312,740.38	89,264.71	85,600.00	.....	359,643.88	18,720.00	24,000.00
Increase in one year	174,669.60	28,715.08	192,640.00	.....	267,861.80	.....	.....
Decrease in one year .....	.....	.....	.....	.....	.....	6,338.78	21,848.76

The following figures from the report of the United States land office at Seattle for the months of July and August, 1889, are appended as showing the extraordinary increase in the number of entries at that office since the close of the fiscal year:

	No.	Area.
		<i>Acres.</i>
Pre-emption filings	*444	71,040.00
Timber lands filings	*100	16,000.00
Homestead entries	349	45,693.07
Cash entries	544	76,568.20
Final certificates	350	55,406.26

*Estimated at 160 acres each.

The Northern Pacific Railroad Company report having sold during the year 416,321 acres at an average price of \$3.68 per acre. These sales were made to 2,279 purchasers.

Land disposed of during the year ended June 30, 1889.

Original homestead entries	487,409.98
Timber-culture entries	117,979.79
Timber-land entries	278,240.00
Pre-emption filings	527,505.68
Coal-land entries	12,381.22
Desert-land entries	2,151.24
Sales by Northern Pacific Railroad Company	416,321.00
Total	1,841,988.91

U. S. LAND LAWS.

Within the limits of railroad grants only the even-numbered sections are disposed of by the Government, and these are known as the *double-minimum* land, and when entered under the pre-emption law the price is \$2.50 per acre.

Outside the railroad limits the land is known as *minimum* land, and is sold at \$1.25 per acre.

Citizenship is required, or a declaration to become a citizen of the United States, before any public lands can be taken in this Territory.

Only one claim can be taken by the same person under each of the public land laws of the United States.

The homestead law.

Every citizen of the United States who is over twenty-one years of age, or the head of a family, can take 160 acres of the public lands (agricultural) by establishing a residence thereon and cultivating the same in good faith as a home for five years from the date of settlement; or if, after six months' residence and cultivation, such persons so desire, they may commute their homestead claim by paying the Government price therefor; or if a soldier or sailor who, having served in the Army or Navy of the United States during the recent rebellion, has been honorably discharged, the time of his service will be deducted from the five years' residence required. But in such cases a residence of one year on the land becomes necessary before patent will be issued.

The pre-emption law.

Residence, cultivation, and sufficient improvements to show the good faith of the claimant are required.

One hundred and sixty acres can be taken of agricultural land; qualification as to age and citizenship is the same as under the homestead law. The claimant must not be the owner of 320 acres of land, nor leave land of his own in this Territory (town lot excepted) in order to settle upon a pre-emption claim, nor take such claim for the purpose of speculation instead of residence and cultivation.

The good faith of every claimant must be clearly established.

He may change his pre-emption filing to a homestead by making proper application to the land office. Not less than six months' residence and improvement are required by law before payment can be made.

On *offered* lands, the declaratory statement must be filed within thirty days, and the final proof made within one year from the date of settlement. On *unoffered* lands, the declaratory statement must be filed within three months, and the final proof made within thirty-three months from the date of settlement.

The price for minimum land is \$1.25 and for double minimum land \$2.50 per acre.

Timber-culture law.

Qualifications of claimant the same as to age, citizenship, and good faith.

Amount of land 160 acres. Land must be devoid of timber. During the first year at least five acres must be plowed. The second year said five acres must be actually cultivated to crop and a second five acres plowed. The third year the first five acres must be planted in timber, seeds, or cuttings, and the second five acres actually cultivated to crop. The fourth year the second five acres must be planted in timber, seeds, or cuttings, making at the end of the fourth year ten acres thus planted.

If the claim is less than 160 acres, the area plowed and planted will be in the same proportion as for 160 acres; that is, one-sixteenth of the claim. Not less than 2,700 trees must be planted on each acre, and there must be at least 675 living trees on each acre to entitle the claimant to patent at the expiration of eight years from date of entry.

Residence in the Territory is not required for timber culture.

Coal-land law.

Same qualifications as to age and citizenship.

One person can purchase 160 acres of coal land. If within 15 miles of a completed railroad, the price is \$20 per acre; if outside that distance, \$10. An association of persons may purchase 320 acres, or an association of not less than four persons, who make an expenditure of \$5,000 upon their claim, may purchase 640 acres, including their improvements.

Coal-land declaratory statements must be filed within sixty days, and proof and payment made within one year from date of possession.

Timber and stone land laws.

Land chiefly valuable for timber and stone, by the act of June 3, 1878, can be purchased in the Territory for \$2.50 per acre. Area, 160 acres. No residence required.

COMMERCE.

No accurate statement of the commerce of the Territory can be rendered, owing to the fact that a large proportion of the grain product of the southeastern section, the salmon pack, and lumber of the Columbia River find their way to market by way of Portland and Astoria, Oregon. Vessels carrying these products clear from the Astoria custom-house. There is no means of determining with any degree of exactness what proportion of this tonnage originates in Washington. Considerable shipments of wheat, barley, and flaxseed, wool, and hides, are made from the Walla Walla and Palouse regions direct to St. Paul, Milwaukee, Chicago, and the Eastern cities. Flouring-mills at Spokane Falls grind large quantities of wheat, the product of which is sold in the mining regions of north Idaho and Montana. I have been unable to obtain any accurate information regarding the amount of these sales.

Trade throughout the Territory for the past year has been remarkably active. The influx of population, generally of thrifty citizens of the Eastern and Northwestern States, has given new impulse in every avenue of trade. The expansion of commerce has kept pace with increase in population, and it is safe to say the volume of business has doubled within two years. New railroads are being projected and constructed in many sections of the Territory, banks are multiplying, and

great manufacturing and mercantile establishments are constantly springing up in all our principal towns.

Puget Sound has an extensive foreign commerce. Wheat is shipped to Europe, lumber to all parts of the Pacific. Teas are shipped direct from China and Japan. The coal consumed in San Francisco and other California cities comes chiefly from Puget Sound. Ocean steam-ships ply regularly between San Francisco, Portland, and the Sound ports. Innumerable steam-boats and other water craft are engaged in the local trade, while a line of boats runs daily between Tacoma and Seattle, Port Townsend and Victoria. Our trade relations with British Columbia and Alaska are extensive and constantly increasing.

The growth of commerce indicated is exceedingly gratifying, foreshadowing its vast extent when the State's resources are fully developed and trade relations more intimately established with the populous countries of Western Asia. The Asiatic coast imports yearly \$300,000,000 of goods. The greater proportion of this trade is now controlled by England. Washington, by reason of proximity to these Asiatic countries, and other advantages, expects to ultimately secure a large percentage of this trade. It even now can distance all competition in the lumber trade and in flour, which can be more cheaply manufactured here than at any other sea-board in the world. The trade in cotton and in canned goods, in agricultural implements, in many lines of machinery, and in numberless other articles, would even now, to a considerable extent, be controlled if adequate steam-ship service was provided. Government aid should at once be extended to American steam-ship lines desiring to engage in the Asiatic trade. We are confronted here with the spectacle of a line of subsidized British steam-ships plying between Vancouver, B.C., and Hong-Kong and Yokahama, diverting business, naturally tributary to Puget Sound cities, to a subsidized line of British railway.

Through the courtesy of Hon. C. M. Bradshaw, collector of customs at Port Townsend, I am enabled to present some interesting statistics pertaining to the Puget Sound district:

Vessels entered from foreign countries during the year ending June 30, 1889.

Date.	Foreign.			American.		
	Sailing.	Steam.	Total tonnage.	Sailing.	Steam.	Total tonnage.
			<i>Tons.</i>			<i>Tons.</i>
July, 1888	4	.....	1,019	6	55	60,435
August, 1888	4	2	1,851	5	73	64,845
September, 1888	1	1	1,067	6	65	56,625
October, 1888	4	3	3,665	9	66	52,462
November, 1888	2	2	3,147	4	66	53,317
December, 1888	2	.....	384	1	64	53,361
January, 1889	2	2	2,899	3	58	52,836
February, 1889 .....	.....	.....	.....	2	61	45,526
March, 1889	4	2	2,003	10	68	58,341
April, 1889	4	1	3,328	5	63	51,264
May, 1889	5	1	4,663	2	78	53,588
June, 1889	13	1	12,272	3	71	49,937
Total	45	15	36,298	56	788	652,537

Foreign vessels entered from adjoining districts during the year ending June 30, 1889.

Date.	Sailing vessels.	Total tonnage.
		<i>Tons.</i>
July, 1888.....	4	3,536
August, 1888.....	10	8,542
September, 1888.....	7	6,973
October, 1888.....	4	5,524
November, 1888.....	6	5,679
December, 1888.....	3	2,662
January, 1889.....	3	2,785
February, 1889.....	3	2,331
March, 1889.....	5	3,824
April, 1889.....	8	9,408
May, 1889.....	2	1,276
June, 1889.....	2	1,485
Total.....	57	54,025

American vessels entered from coastwise during the year ending June 30, 1889.

Date.	Sailing.	Steam.	Total tonnage.
			<i>Tons.</i>
July, 1888.....	4	10	12,699
August, 1888.....	18	8	28,851
September, 1888.....	10	8	13,456
October, 1888.....	13	13	25,334
November, 1888.....	12	13	27,920
December, 1888.....	5	5	11,256
January, 1889.....	3	7	9,434
February, 1889.....	1	4	5,151
March, 1889.....	9	5	18,767
April, 1889.....	13	7	21,756
May, 1889.....	11	10	18,169
June, 1889.....	9	8	9,383
Total.....	108	98	202,086

Vessels cleared for foreign countries during the year ending June 30, 1889.

Date.	Foreign.			American.		
	Sailing.	Steam.	Total tonnage.	Sailing.	Steam.	Total tonnage.
			<i>Tons.</i>			<i>Tons.</i>
July, 1888.....	15	1	12,228	9	60	67,708
August, 1888.....	8	2	8,048	16	74	78,915
September, 1888.....	8	2	7,206	12	72	67,034
October, 1888.....	9	3	9,955	14	67	63,384
November, 1888.....	13	2	14,949	12	66	62,938
December, 1888.....	9	2	9,253	20	71	76,331
January, 1889.....	4	2	5,092	7	64	57,903
February, 1889.....	5	.....	5,231	5	59	45,358
March, 1889.....	6	2	4,621	7	74	60,309
April, 1889.....	8	1	6,933	14	69	60,215
May, 1889.....	7	2	6,703	10	83	62,264
June, 1889.....	9	1	9,616	6	74	62,819
Total.....	101	20	99,835	132	833	765,178

American vessels cleared for coastwise during the year ending June 30, 1889.

Date.	Sailing.	Steam.	Total Tonnage.
			<i>Tons.</i>
July, 1888.....	6	3	9,917
August, 1888.....	5	5	6,263
September, 1888.....	3	6	8,742
October, 1888.....	5	6	6,775
November, 1888.....	2	6	6,298
December, 1888.....	3	3	5,486
January, 1889.....	4	4	8,065
February, 1889.....	1	4	6,332
March, 1889.....	1	4	4,475
April, 1889.....	2	5	8,412
May, 1889.....	5	9	14,589
June, 1889.....	1	9	8,384
Total	38	64	93,738

RECAPITULATION.

Months.	Entrances.					Clearances.				
	Foreign vessels from foreign countries.	Foreign vessels from adjoining districts.	American vessels from foreign countries.	American vessels from coastwise.	Total entrances.	Total tonnage.	Foreign vessels for foreign countries.	American vessels from foreign countries.	American vessels for coastwise.	Total clearances.
July	4	4	61	14	91	77,689	16	69	9	94
August	6	10	78	26	124	104,089	10	90	10	110
September	2	7	71	18	98	78,121	10	84	9	103
October	7	4	75	26	112	86,985	12	81	11	104
November	4	6	70	25	105	90,063	15	88	8	101
December	2	3	65	10	80	67,663	11	91	6	108
January	4	3	61	10	78	67,954	6	71	8	85
February		3	63	5	71	53,008	5	64	5	74
March	6	5	78	14	103	82,935	8	81	5	94
April	5	8	68	20	101	85,756	9	83	7	99
May	6	2	80	21	109	77,696	9	93	14	116
June	14	2	74	17	107	73,077	10	80	10	100
Grand totals	60	57	844	208	1,179	955,036	121	975	102	1,188

Value of exports from Puget Sound district for the year ending June 30, 1889.

Month.	Value.	Month.	Value.
July	\$198,724	April	\$149,863
August	217,209	May	111,926
September	281,042	June	95,968
October	470,768		
November	145,621	Total	2,937,477
December	543,723	Total for 1886-'87.....	1,769,209
January	204,954		
February	225,337	Increase in two years.....	1,168,268
March	292,342		

Comparisons for the past five years.

Year.	Clearances.	Entrances.
	<i>Tons.</i>	<i>Tons.</i>
1884.....	471,267	506,291
1885.....	515,032	541,025
1886.....	488,226	490,025
1887.....	617,886	657,465
1888.....	965,474	941,167

List of vessels belonging in the district of Puget Sound, port of Port Townsend.

Rig.	Vessel.	Nettons.	Where built.	When built.	Managing owner.	Residence.
Screw	Active	6.77	Tacoma	1884	A. Herriman	Tacoma.
Do	Albert Lea	10.38	Gig Harbor	1888	Francis Hall	Gig Harbor.
Do	Edith E	11.80	Houghton	1886	Mary Kroft	Houghton.
Do	Estella	14.84	Tacoma	1885	B. K. Hall	Tacoma.
Paddle	Gleaner	17.14	Seattle	1886	Mrs. H. D. Leader	Seattle.
Screw	Halys	12.72	Vashon	1888	R. B. Dilworth	Vashon.
Do	Iola	13.03	Big Skookum	1885	Edward Miller	Shelton.
Do	Jessie	5.97	Seattle	1881	James Avery	Olympia.
Do	North Bay	14.43	North Bay	1888	J. C. Gill	North Bay.
Do	Seaside	19.02	Portland	1885	L. F. Cook	Tacoma.
Do	Squak	18.51	Lake Washington	1884	J. C. O'Connor	Houghton.
Do	Success	6.57	Utsalady	1868	James Nugent	Port Blakely.
Do	Violet	8.56	Seattle	1887	Franklin Elliott	Seattle.
Do	Virginia	9.92	San Francisco	1875	L. B. Hastings	Port Townsend.
Paddle	Alaskan	94.51	Seattle	1886	M. Lenz	Do.
Screw	Augusta	12.70	do	1882	William H. Hamlin	Port Madison.
Do	Arcadia	40.27	Arcadia	1889	William Renton	Arcadia.
Do	Blakely	98.77	Port Blakely	1872	James W. Tarte	Port Blakely.
Do	Brick	34.55	Seattle	1883	D. B. Jackson	Semiahmoo.
Paddle	City of Quincy	195.40	Portland	1878	Puget Sound Commercial Company	Utsalady.
Do	Cyrus Walker	154.25	San Francisco	1864	D. B. Jackson	Port Gamble.
Do	Daisy	97.87	Seattle	1880	Daniel Troutman	Utsalady.
Screw	Delta	26.45	Stanwood	1888	W. K. Merwin	Union City.
Paddle	E. W. Purdy	83.82	Utsalady	1888	D. B. Jackson	Seattle.
Screw	Edith	135.99	San Francisco	1882	H. M. Race	Utsalady.
Do	Edna	19.53	Seattle	1882	D. B. Jackson	Port Discovery.
Paddle	Eliza Anderson	197.49	Portland, Oregon	1859	L. B. Hastings	Utsalady.
Screw	Enterprise	14.25	Port Townsend	1884	James Morgan	Port Townsend.
Do	Evangel	77.21	Seattle	1882	Nelson Bennett	Do.
Paddle	Fairhaven	240.57	Tacoma	1889	Puget Sound Commercial Company	Tacoma.
Do	Favorite	212.08	Utsalady	1868	Z. J. Hatch	Port Gamble.
Screw	Fleetwood	67.70	Portland, Oregon	1881	Puget Sound Commercial Company	Olympia.
Paddle	Goliah	187.07	New York	1849	Grace L. Seymour	Port Gamble.
Screw	Grace	27.22	Seattle	1886	R. W. Maloney	Colby.
Do	Harry Lynn	45.51	Tacoma	1888	W. H. Ellis	Tacoma.
Do	Helen	11.09	Coupeville	1882	H. F. Beecher	Seattle.
Do	J. B. Libby	102.25	Utsalady	1863	T. A. Jensen	Port Townsend.
Do	J. E. Bowden	53.08	Seattle	1888	J. M. Coleman	Seattle.
Do	J. M. Coleman	43.17	do	1887	Grace E. Dyer	Do.
Paddle	James McNaught	67.39	do	1882	William M. Hanson	Lynden.
Screw	Katy	27.75	San Francisco	.....	H. M. McCarthey	Tacoma.
Paddle	Kootenai	268.52	Little Dalles	1885	S. Baxter	Spokane Falls.
Screw	L. J. Perry	39.98	Port Gamble	1875	John H. Nibbe	Seattle.
Do	Lief Erickson	14.07	Stanwood	1888		Nibbeville.

Do.....	Lottie.....	30.17	Cypress Island	1882	S. Sweeney	Friday Harbor.
Do.....	Lura Lowe	64.58	Britisher*	.....	R. J. Lowe	Port Townsend.
Do.....	Lucy Maud	36.48	Lake Washington	1887	F. A. Richardson	Kirkland.
Do.....	Meta.....	25.48	Lake Bay.....	1888	C. O. Lorenz	Tacoma.
Do.....	Michigan	21.05	Portland, Oregon	1885	James Nugent	Port Blakely.
Do.....	Mogul.....	61.60	Tacoma.....	1886	J. H. Stetson	Port Townsend.
Paddle	Mountaineer	52.94	Chinook.....	1883	W. H. Ellis	Seattle.
Do.....	Nellie.....	55.03	Seattle.....	1876	H. H. Mills	Snohomish.
Do.....	Pearl.....	53.91	do.....	1884	A. J. Edwards	Seattle.
Screw	Phantom	28.11	Port Madison	1868	Gottfried Meyer	Do.
Paddle	Politkofsky	174.89	Sitka, Alaska	1863	William Renton	Port Blakely.
Screw	Queen City	33.66	Seattle.....	1883	John J. Post	Seattle.
Do.....	Rainer.....	51.54	do.....	1887	L. V. Penny	Do.
Do.....	Richard Holyoke	90.94	Seabeck.....	1877	Rodney Kendrick	Hadlock.
Do.....	Rip Van Winkle	21.08	Astoria.....	1877	Brown's Wharf and Navigation Company	Tacoma.
Do.....	S. L. Mastie	106.50	Port Discovery	1869	David Gilmore	Seattle.
Do.....	San Juan	6.40	East Portland	1887	George E. Hall	Do.
Do.....	Sarah M. Renton	68.57	Port Blakely	1889	William Campbell	Port Blakely.
Do.....	Saranac.....	6.07	Whatcom.....	1878	J. W. Baker	Whatcom.
Do.....	Seattle.....	6.52	Seattle.....	1881	Puget Sound Commercial Company	Seattle.
Paddle	Shoo Fly.....	27.32	Coupeville.....	1881	H. J. Olney	Utsalady.
Do.....	Skagit Chief	241.17	Tacoma.....	1887	Pacific Navigation Company	Tacoma.
Screw	Sophia.....	12.61	Lake Bay.....	1884	C. O. Lorenz	Do.
Do.....	Susie.....	42.12	Seattle.....	1879	W. S. Bowl	Do.
Do.....	Tacoma.....	128.42	San Francisco	1876	William Hanson	Do.
Do.....	Tyee.....	158.17	Port Ludlow.....	1884	Puget Sound Commercial Company	Port Gamble.
Do.....	Utsalady.....	33.26	Utsalady.....	1884	John W. Collins	Laconner.
Paddle	W. K. Merwin	166.04	Seattle.....	1883	D. B. Jackson	Utsalady.
Do.....	Washington	193.08	Vancouver.....	1881	do.....	Do.
Screw	Wildwood	26.79	Portland.....	1884	D. B. Hastings	Port Townsend.
Paddle	Wm. F. Monroe	99.81	Seattle.....	1883	C. D. Brownfield	Snohomish.
Do.....	Yakima.....	127.47	Port Gamble.....	1874	Puget Sound Commercial Company	Port Gamble.
Screw	Pioneer.....	80.48	Philadelphia, Pa.	1878	Charles A. Moore	Port Discovery.
Paddle	Alida.....	114.46	Seattle.....	1870	S. B. Willey	Portland.
Screw	Alki.....	572.03	Bath, Me.....	1884	Charles Goodall	San Francisco.
Paddle	Emma Hayward	456.07	Portland, Oregon	1878	S. B. Willey	Portland.
Screw	Geo. E. Starr	336.63	Seattle.....	1879	do.....	Do.
Paddle	Hassalo.....	350.85	The Dalles.....	1880	do.....	Do.
Screw	Idaho.....	178.82	East Portland	1881	do.....	Do.
Do.....	Lone Fisherman	6.46	Seattle.....	1883	Francis Cutting	San Francisco.
Paddle	North Pacific	345.46	San Francisco.....	1871	S. B. Willey	Portland.
Do.....	Olympian	1,083.20	Wilmington, Del.	1883	do.....	Do.
Do.....	Otter.....	92.88	Portland, Oregon	1874	do.....	Do.
Do.....	T. J. Potter	589.60	do.....	1888	do.....	Do.
Do.....	Welcome	250.99	do.....	1874	do.....	Do.
Screw	Premier	602.05	San Francisco.....	1887	Ernst W. Spencer	Do.
Do.....	Addie.....	81.02	Seattle.....	1874	Frank Hanford	Seattle.
Paddle	Alki.....	39.81	do.....	1881	Pacific Broom Company	Utsalady.
Screw	Angeles	47.01	Port Angeles	1889	August F. England	Port Angeles.
Paddle	Bob Irving	125.30	Seattle.....	1883	H. J. Olney	Utsalady.

* Seized.

List of vessels belonging to the district of Puget Sound, port of Port Townsend—Continued.

Rig.	Vessel.	Net tons.	Where built.	When built.	Managing owner.	Residence.
Paddle.....	Cascade.....	64.54	Seattle.....	1884	G. W. Gove.....	Seattle.
Do.....	City of Seattle.....	186.96	Portland.....	1888	Thomas Ewing.....	Do.
Screw.....	Clara Brown.....	111.86	Tacoma.....	1886	Brown W. & N. Company.....	Tacoma.
Do.....	Colfax.....	83.30	Seabeck.....	1865	Marshall Bloom.....	Seabeck.
Do.....	Cornet.....	56.88	Seattle.....	1871	George A. Cushman.....	Seattle.
Paddle.....	Edith.....	52.18	Sehome.....	1884	P. B. Randolph.....	Do.
Do.....	Fanny Lake.....	118.81	Seattle.....	1875	Edwin W. Smith.....	Do.
Screw.....	Gem.....	87.62	do.....	1878	James Latham.....	Skokomish.
Paddle.....	Henry Bailey.....	209.59	Tacoma.....	1883	Pacific Navigation Company.....	Tacoma.
Screw.....	Josephine.....	64.53	Seattle.....	1884	D. K. Howard.....	Seabeck.
Paddle.....	Kirkland.....	117.65	Lake Washington.....	1883	J. M. Thompson.....	Seattle.
Do.....	Lily.....	86.80	Seattle.....	1881	S. W. Young.....	Mt. Vernon.
Screw.....	Louisa.....	129.77	Seabeck.....	1883	Rodney Kendrick.....	Hadlock.
Paddle.....	Mame.....	43.03	Snohomish.....	1887	T. H. McMillen.....	Snohomish.
Do.....	Mary F. Perle.....	127.58	Samish.....	1888	A. S. Perley.....	Point Williams.
Screw.....	May Queen.....	47.99	Seattle.....	1886	G. W. Gove.....	Seattle.
Paddle.....	Messenger.....	97.11	Olympia.....	1876	Henry Winchester.....	Minter.
Do.....	Neptune.....	24.37	Seattle.....	1878	John A. Hatfield.....	Seattle.
Do.....	Nooksack.....	84.49	Lynden.....	1888	Charles H. Schoff.....	Lynden.
Screw.....	St. Patrick.....	21.75	Waterford.....	1874	D. K. Howard.....	Seattle.
Paddle.....	Willie.....	55.94	Seattle.....	1883	Samuel Willey.....	Olympia.
Screw.....	Zephyr.....	109.79	do.....	1871	William H. Hanson.....	Tacoma.
Paddle.....	Glide.....	78.54	do.....	1883	H. Dutard.....	San Francisco.
Screw.....	Gold Dust.....	22.07	The Cascades.....	1881	F. C. Goodin.....	Portland.
Do.....	Louis Olsen.....	56.80	Britisher *.....	.....	William Olsen.....	Tillamook, Oregon.
Schooner.....	Adventurer.....	12.90	Seattle.....	.....	G. C. Reed.....	Seattle.
Do.....	Alice.....	13.20	do.....	1886	O. N. Morse.....	Do.
Sloop.....	August.....	10.10	Two Mile Point.....	1888	George H. Thomas.....	Clallam County.
Schooner.....	Clara Bell.....	7.01	Seattle.....	1886	Charles Clark.....	Seattle.
Do.....	Comet.....	5.28	Port Townsend.....	1889	G. A. Glandner.....	Steilacoom.
Do.....	Enterprise.....	6.11	Coupeville.....	1883	Thomas Cummings.....	Coupeville.
Do.....	Escort.....	7.89	Dewatto.....	1855	J. B. Rice.....	Dewatto.
Sloop.....	Hawkeye.....	8.29	Oreas Island.....	1886	W. H. Howard.....	Seattle.
Schooner.....	Industry.....	10.73	Seattle.....	1877	E. P. Newhall.....	East Sound.
Sloop.....	Margaret.....	8.47	Port Gamble.....	1868	R. C. Polhill.....	Port Ludlow.
Do.....	Prospector.....	9.34	Cypress Island.....	1887	A. W. Thomas.....	Guemes Island.
Do.....	Sea Gull.....	15.77	Port Ludlow.....	1889	Jacob Johnson.....	Port Ludlow.
Schooner.....	Sea Bird.....	8.31	Crescent Bay.....	1887	G. G. Wells.....	Crescent Bay.
Barge.....	J. C. Brittain.....	105.34	Seattle.....	1885	J. C. Brittain.....	Seattle.
Schooner.....	Albatross.....	6.86	do.....	1884	W. S. Thompson.....	Do.
Do.....	Allie L. Alger.....	75.45	do.....	1886	J. C. Nixon.....	Do.
Barkentine.....	Amelia.....	378.07	Coos Bay, Oregon.....	1870	William Newhall.....	Do.
Schooner.....	American Ranger.....	21.66	Dewatto.....	1887	Karl Haller.....	Quilcene.
Bark.....	Arkwright.....	1,209.95	Portsmouth, N. H.....	1855	Cyrus Walker.....	Port Gamble.

Bark.	Buena Vista.	736.55	Newburyport.	1858	Puget Sound Commercial Company.	Do.
Schooner	C. C. Perkins	25.38	Seattle.	1874	D. A. Kabiss (Ind)	Neah Bay.
Bark	C. O. Whitmore	855.49	Bath, Me	1868	Rufus Calhoun	Port Townsend.
Schooner	Carrie Hayden	14.55	Seattle, 1875	1875	Henry A. Taylor	Do.
Bark	Ceylon.	646.95	Boston, Mass	1856	Rufus Calhoun	Do.
Schooner	Challenger	27.69	Seattle.	1885	C. W. Caster	Schome.
Do.	Cora May.	12.43	do	1888	J. B. Thurston	Seattle.
Do.	Emily	19.22	Deception Pass	1884	Benjamin Une	Whidby Island.
Bark	Fresno	1, 187.02	Bath, Me	1874	Cyrus Walker	Port Gamble.
Schooner	Granger	49.62	Utsalady	1882	H. J. Lipsett	Dungeness.
Do.	Henrietta.	39.52	Lopez Island	1886	Lucy Barlow	Lopez Island.
Do.	James H. Lewis.	77.52	Britisher*		J. C. Dixon	Seattle.
Do.	Jennie	15.03	San Francisco	1875	John Elwood	Semishmoo.
Ship	Jermiah Thompson	1, 831.25	Williamsburgh	1854	Charles A. Moore	Port Discovery.
Barkentine	Klickitat	468.59	Coos Bay, Oregon	1881	Cyrus Walker	Port Gamble.
Schooner	Maggie	30.26	Port Townsend	1878	William H. Hagadore	Fidalgo Island.
Bark	Mary Glover	700.70	Boston, Mass	1849	Charles A. Moore	Port Discovery.
Schooner	Mary Parker	85.50	Utsalady	1876	J. P. Adams	Port Townsend.
Ship	Mercury	1, 098.38	New York	1851	William Renton	Port Blakely.
Schooner	Mist	17.87	Oak Point	1865	Henry Landers	Port Townsend.
Bark	Pearl	509.34	Newport.	1862	Rodney Kendrick	Hadlock.
Do.	Rainer	499.20	Robbinstown	1865	Puget Sound Commercial Company	Port Gamble.
Do.	Richard III.	554.08	Portsmouth	1859	James McIntyre	Port Townsend.
Schooner	Rustler	46.05	East Sound	1883	J. A. Fry	East Sound.
Do.	Sierra	26.49	Marysville, Oregon	1854	Thomas Carlisle	Neah Bay.
Do.	Teaser	33.27	Cascades	1874	S. Baxter	Seattle.
Do.	Venture	23.27	Ilwaco	1886	J. S. Nixon	Do.
Ship	Belle O'Brien	1, 807.77	Thomaston	1875	Edward O'Brien	Thomaston, Mass.
Do.	Ericsson	1, 568.07	New York	1852	Pacific Coast Steam-ship Company	San Francisco.
Schooner	Mary Ellen	77.95	San Francisco	1863	do	Do.
Bark	Mennon	806.66	Boston, Mass	1858	Leon Blum	Do.
Ship	Merom	1, 158.30	Phippsburg	1870	Charles G. Minott	Phippsburg, Me.
Do.	Mount Washington	1, 162.13	Saco, Me.	1867	Leon Blum	San Francisco.
Bark	Theobald	933.33	Richmond	1865	C. S. Holmes	Do.
Ship	Valley Forge	1, 226.35	Pittston, Me	1862	George Middleton	Do.
Schooner	William F. Witzman	449.55	Fairhaven, Conn.	1887	James Madison	Do.
Bark	Atlanta.	824.38	Amesburg	1851	Cyrus Walker	Port Gamble.
Do.	Arcturus	1, 007.21	Kennebunk	1865	Rodney Hendrick	Hadlock.
Do.	Bonanza	1, 292.72	Bath, Me	1875	Puget Sound Commercial Company	Gamble.
Do.	Canada	1, 144.66	do	1859	William H. Hanson	Tacoma.
Ship	Carondelet	1, 376.03	New Castle, Me.	1872	Puget Sound Commercial Company	Port Gamble.
Bark	Cowlitz	1, 740.22	Bath, Me	1881	do	Do.
Ship	Dashing Wave.	1, 012.14	Portsmouth	1853	William H. Hanson	Tacoma.
Brig	Deacon	402.09	Bath, Me	1863	Charles A. Moore	Port Discovery.
Schooner	Edward E. Webster	93.86	Gloucester	1875	William Huddel	Port Townsend.
Bark	General Butler	1, 163.37	Bath, Me	1863	Puget Sound Commercial Company	Port Gamble.
Ship	Guardian	1, 072.55	Damariscotta	1863	Rodney Hendrick	Hadlock.
Barkentine	J. M. Griffiths	574.98	Seabeck	1882	do	Do.
Bark	James Cheston	948.45	Baltimore.	1855	Cyrus Walker	Port Gamble.
Schooner	James G. Swan	44.43	British*		C. Peterson	Port Townsend.

• Seized.

List of vessels belonging in the district of Puget Sound, port of Port Townsend—Continued.

Rtg.	Vessel.	Net tons.	Where built.	When built.	Managing owner.	Residence.
Ship	Kate Davenport	1, 193.74	Bath, Me	1866	William Renton	Port Blakely.
Schooner	Kitsap	735.84	Port Ludlow	1887	Puget Sound Commercial Company	Port Gamble.
Do.	Lottie	28.69	Utsalady	1868	James Clapantoo	Neah Bay.
Do.	Mollie Adams	117.26	Kennebunk	1884	William Hudder	Port Townsend.
Bark.	Nellie May	664.17	New Castle, Me.	1867	William P. Sayward	Port Madison.
Do.	Northwest	489.52	Port Madison	1868	do	Do.
Do.	Nonantum	1, 099.59	Newburyport	1886	do	Do.
Do.	Oakland	507.72	Bath, Me	1865	do	Do.
Ship	Palmyra	1, 299.39	do	1876	Puget Sound Commercial Company	Port Gamble.
Do.	Prussia	1, 172.03	do	1868	William Renton	Port Blakely.
Bark.	B. K. Ham	541.83	Port Blakely	1874	do	Do.
Barkentine	Retriever	520.33	Seabeck	1881	Rodney Kendrick	Hadlock.
Bark.	Roswell Sprague	923.11	Bath, Me	1856	Puget Sound Commercial Company	Port Gamble.
Do.	Sagamore	1, 274.46	Portsmouth	1856	do	Do.
Do.	Samoset	601.25	do	1847	William H. Hansen	Tacoma.
Do.	Shirley	996.62	Medford, Mass.	1850	do	Do.
Barkentine	Skagit	481.61	Port Ludlow	1883	Cyrus Walker	Port Gamble.
Bark	Tidal Wave	573.24	Port Madison	1869	William P. Sayward	Port Madison.
Ship	Topgallant	1, 228.61	East Boston, Mass.	1863	William Renton	Port Blakely.
Bark.	Vidette	585.86	Bath, Me.	1864	William P. Sayward	Port Madison.
Schooner	Henry Dennis	91.55	Essex, Mass.	1883	Joshua Brown	Salem, Mass.
Do.	Oscar and Hattie	81.28	do	1884	C. Johnson	Swampscott, Mass.
Do.	Puritan	533.68	Port Madison	1888	C. A. Hooper	San Francisco.
Do.	Rosie Olsen	47.40	East Portland, Oregon	1886	William Olsen	Tillamook, Oregon.
Screw.	Biz	40.27	Arcadia	1881	Edward Miller	Shelton.
Do.	Union	13.31	Portland, Oregon	1883	A. W. Berri	Port Townsend.

In addition to the list obtained of the custom-house, the tonnage of lumber and coal vessels which arrived and departed under license is added. The total number of vessels is 472; total tonnage, over 500,000.

The following tables, compiled by the Seattle Post-Intelligencer, contain additional information relating to the year ended December 31, 1888

The total ocean tonnage of Puget Sound for 1888 was as follows:

	Tons.
Entrances under register, 1,039 vessels.....	941, 16'
Entrance under license, 472 vessels	509, 121
Total.....	1, 450, 288
Clearances under register, 1,046 vessels.....	965, 474
Clearances under license, 472 vessels	509, 121
Total.....	1, 474, 595
Total entrances.....	1, 450, 288
Total clearances	1, 474, 595
Total ocean commerce	2, 924, 883

IMPORTS DIRECT.

During the year the direct imports to the Puget Sound district aggregated \$395,631, classified as follows:

<i>Free.</i>			
Raw furs and skins	\$165, 921	Cattle and horses.....	1, 932
Household goods and personal effects ...	33, 353	Common brick	2, 483
Tea.....	9, 602	Fire-brick.....	478
Chinese goods	882	Cement	2, 939
Horses for breeding.....	4, 200	Tin-plate.....	727
Axle grease.....	408	Pig-iron.....	5, 012
Ice.....	197	Iron-ore.....	11, 694
Cattle for breeding.....	630	Coal.....	12, 565
Corned beef.....	1, 417	Wool.....	2, 423
Fruit-trees.....	235	Dog-fish oil.....	3, 040
Miscellaneous.....	2, 475	Second-hand machinery.....	1, 449
Total	219, 370	Iron castings and metal.....	147
		Steam-launch	225
		Earthen and porcelain ware	1, 791
		Patent medicines	145
		Laces, fancy goods, toys, etc.....	4, 632
		Small stuff from panings.....	201
		Mustard	601
		Terne-plates	2, 601
		Yellow-metal	1, 376
		Coca	454
		Submarine cable.....	450
		Electric-light machinery.....	1, 500
		Miscellaneous.....	1, 742
		Total	176, 261

Comparisons.

Year.	Free goods.	Dutiable.	Total duties.
1885	\$566, 117	\$35, 468	\$26, 191. 36
1886.....	319, 209	56, 145	23, 824. 62
1887.....	168, 527	150, 109	103, 995. 83
1888.....	219, 370	176, 261	112, 990. 15

IMPORTS IN BOND.

During the year imports in bond to the value of \$994,090 were made into the Puget Sound district. These were goods and merchandise received at Port Townsend from foreign ports destined to American ports outside of the Puget Sound district. Of the

above amount \$994,090 was free and \$57,213 dutiable. The estimated duty on the latter was \$41,701.09. Classified, the imports in bond were:

Tea	\$930,034	Wool	\$4,349
Chinese goods and wines	21,749	Salt fish	835
Rice	8,923	Curios	950
Fish-oil	1,906	Bric-a-brac	1,312
Liquors	1,207	Straw baskets	6,714
Porcelain and china ware	3,807	Hats and caps	403
Silk screens	1,446	Flax net	1,064
Manufactures of linen	1,321	Miscellaneous	212
Clothing and dry goods	690		
Pelts and skins	7,265	Total	994,490

ENTRIES FOR TRANSSHIPMENT.

Entries of products from foreign countries at the Port Townsend custom-house for transshipment to foreign countries through the United States were \$369,218, as follows:

From Japan	\$234,247
From British Columbia	134,971

Classified, these entries were:

Pickled salmon, 1,657 barrels	\$14,743	Manufactures of wool	576
Canned salmon	74,836	Curios	200
Tea	230,470	Manufactures of silk	697
Seal-skins	42,400	Jewelry	250
Manufactures of leather	228	Household furniture	550
Earthenware	1,613	Miscellaneous	366
Hops	3,195		
Japanese ware	1,794	Total	369,218
Boots and shoes	300		

FOREIGN EXPORTS.

The total foreign exports from the Puget Sound district during the year were \$3,803,533, divided as follows:

Wheat	\$1,659,825.00
Lumber—	
To Australia	\$818,708.17
To South America	196,502.29
To Hawaii	107,931.67
To Mexico	27,156.78
To China	26,974.00
To India	8,000.00
	1,185,097.91
Other exports	958,435.09
Total	3,803,533.00

The other exports were to British Columbia, and are as follows:

Agricultural implements	\$5,441	Copper, manufactures of	\$1,160
Animals:		Cotton, manufactures of	9,534
Cattle, 558 head	18,755	Earthen and china ware	2,656
Hogs, 3,191 head	10,997	Eggs, 76,485 dozen	16,956
Horses and mules, 122 head	12,755	Fish	1,400
Sheep, 24,456 head	52,477	Oysters	662
All other animals and fowls	1,328	Flax:	
Blocking	976	Cordage and twine	1,726
Bones, horns, etc	20	All other flax manufactures	825
Books, maps, engravings, etc	5,360	Fruits:	
Brass, manufactures of	376	Green apples, 4,227 barrels	8,962
Breadstuffs:		Canned fruit	923
Wheat	7,480	All other fruit	6,717
Flour, 64,271 barrels	247,867	Nuts	386
All other breadstuffs	35,574	Furs and fur skins	55,480
Bricks	24	Glass and glassware	5,426
Brooms and brushes	697	Glucose	48
Candy	960	Grease	332
Carriages	5,235	Gunpowder and other explosives	210
Casings for sausages	143	Honey	14
Chemicals:		Hops	21,680
Patent medicines	748	Ice	10
All other drugs	8,875	India rubber, manufactures of:	
Clocks and watches	382	Boots and shoes	9,509
Coal	1,243	All other India-rubber manufactures	4,298
Coffee	709	Ink	790

Instruments, scientific.....	\$3,832	Provisions—Continued.	
Iron and steel:		Butter.....	\$1,281
Boilers.....	\$2,212	Cheese.....	26
Castings.....	15,518	Milk.....	414
Cutlery.....	347	Roof slating.....	2,231
Fire-arms.....	708	Salt.....	34
Locks and builders' hardware.....	1,899	Seeds.....	3,017
Machinery not elsewhere specified.....	15,046	Soap.....	69
Saws and tools.....	10,111	Spices.....	560
Sewing machines.....	1,791	Spirits:	
Stoves.....	759	Bourbon whisky.....	1,496
All other iron and steel.....	11,539	All other spirits.....	539
Lamps.....	1,816	Spirits turpentine.....	1,548
Lead.....	1,555	Starch.....	195
Leather:		Stationery.....	2,085
Boots and shoes.....	8,990	Sirup.....	3,858
Other manufactures of.....	1,442	Tin, manufactures of.....	2,137
Lime and cement.....	2,179	Tobacco, cigars, and cigarettes.....	10,896
Malt liquors.....	4,793	Trunks.....	427
Marble and stone, manufactures of.....	185	Varnish.....	221
Matches.....	3	Vegetables:	
Musical instruments:		Onions.....	383
Pianos.....	5,829	Potatoes.....	2,066
Organs.....	2,311	Canned vegetables.....	563
Other instruments.....	100	All other vegetables.....	380
Oakum.....	43	Vessels sold to foreigners:	
Oil:		Sailing.....	800
Lard oil.....	1,043	Steam.....	3,600
Fish oil.....	138	Vinegar.....	70
Illuminating oil.....	37,650	Wood, manufactures of:	
Lubricating oil.....	2,882	Lumber.....	1,783
Paints.....	3,065	Moldings.....	1,397
Paper of all kinds.....	7,844	Woodenware.....	2,843
Plated ware.....	642	All other manufactures of wood.....	3,986
Provisions:		Wearing apparel.....	5,836
Canned beef.....	5,873	Wool, manufactures of.....	2,233
Bacon, 408,050 pounds.....	42,148	Household furniture.....	20,437
Hams, 206,366 pounds.....	23,158	All other articles, manufactured and un-	
Pickled pork.....	369	manufactured.....	2,988
Lard, 239,226 pounds.....	21,495	Zinc, manufactures of.....	127
Mutton.....	594		
All other meats.....	5,339	Total.....	958,405

EXPORTS, HOW CARRIED.

The following table shows the nationality of vessels which carried away the exports of Puget Sound:

Month.	American steam.	American sail.	Foreign sail.	Total.
December.....	\$68,400	\$20,232	\$50,793	\$139,425
January.....	51,381	100,939	117,262	269,582
February.....	78,339	77,804	71,313	227,456
March.....	121,558	156,288	39,133	316,979
April.....	61,655	12,079	283,408	357,142
May.....	90,241	20,461	157,952	268,654
June.....	66,540	12,513	75,691	154,744
July.....	66,966	32,396	108,661	208,023
August.....	65,320	61,790	105,549	232,659
September.....	61,791	220,313	59,165	341,269
October.....	93,955	339,071	327,310	760,336
November.....	64,912	79,448	382,904	527,264
Total.....	891,058	1,133,334	1,779,141	3,803,533

PROGRESS OF RAILROADS.

Railroad construction has been quite active during the past year. Existing mileage is shown in the table below :

		Miles.
Northern Pacific Railroad Company :		
Main line		648.2
Roslyn branch		3.4
Spokane and Palouse		104.1
Northern Pacific and Puget Sound		7
Northern Pacific and Cascade		7.8
Spur to mines at Burnett		1.7
Central Washington, Cheney to Davenport		45
Total standard gauge		807.2
Oregon Railway and Navigation Company :		
From Oregon State line to Wallula Junction		6.2
From Walla Walla to Riparia		55.7
From Bolles Junction to Dayton		18
From Starbuck to Pomeroy		29.5
From Walla Walla to Oregon State line		5.4
From Walla Walla to Wallula		31.2
Columbia and Palouse, operated by Oregon Railway and Navigation Company		141.6
From Texas Ferry to La Crosse Junction		24.6
From Farmington to Rockford		33.8
From Winona Junction to Seltice Junction		48.1
Total standard gauge		389.1
Narrow gauge :		
Cascades Railroad, operated by Oregon Railway and Navigation Company		6
Mill Creek F. and M. Company, operated by Oregon Railway and Navigation Company		13.4
Total narrow gauge		19.4
Oregon and Washington Railway Company :		
Hunt's Junction to Oregon State line		9
Hunt's Junction to Walla Walla		52
Eureka Flat branch		23
Total standard gauge		84
Seattle, Lake Shore and Eastern Railroad Company :		
Snoqualmie division		24
West coast		20
Spokane Falls to Davenport		45
Total standard gauge		89
Puget Sound and Gray's Harbor Railroad Company		13
Puget Sound and Shore Line Railroad Company		20.5
Columbia and Puget Sound Railroad Company		63
Vancouver, Klickitat and Yakima Railroad Company		10
Grand total standard gauge		1,475.8

Narrow gauge:	Miles.
Olympia and Chehalis Valley.....	21
Satsop Railway.....	16
Ilwaco Railway and Navigation Company.....	16
Cascades Railroad, operated by Oregon Railway and Navigation Company.....	6
Mill Creek F. & M. Co., operated by Oregon Railway and Navigation Company.....	13.4
Total narrow gauge.....	72.4
Total standard gauge.....	1,475.8
Total mileage, 1889.....	1,548.2
Total mileage, 1888.....	1,197.7
Increase in one year.....	350.5

Construction work is being actively pushed on the following roads, and not less than 100 miles of track have been laid since the end of the fiscal year: Puget Sound and Gray's Harbor, Seattle Northern (23 miles graded), Port Townsend Southern ($1\frac{3}{4}$ miles graded), Ellensburg and Northeastern (10 miles graded), Fairhaven Southern (27 miles under construction). On the Oregon and Washington track has been laid from Walla Walla to Waitsburgh, 20 miles. The Spokane and Northern has about 50 miles of track, and will complete the line to Colville by the end of the present month, while the Oregon Railway and Navigation Company has just completed a line from Rockford to Spokane Falls.

AGRICULTURAL DEVELOPMENT.

In 1885 the total number of acres of land assessed, as reported by Governor Squire, was 3,457,952. The number of acres assessed for 1889, as reported by the various county assessors, was 8,110,706; an increase in four years of 4,652,754. The present acreage of improved land, so far as reported, is 953,791, of which 820,795 acres lie in the counties east of the Cascade Mountains, and 132,736 in the counties on the west. The distinctively agricultural section, it will be seen from the foregoing, lies east of the mountains. A prairie country, possessed of an equable climate, a fertile soil, yielding marvelously in cereals and vegetables and in fruits, is a most attractive region to the agriculturist, especially to those emigrating from the rigorous climate of the Northern States. In the Walla Walla, Palouse, Spokane, and Big Bend regions no irrigation is required, cereals, fruits, and vegetables attaining great perfection without it. In the Walla Walla section much attention is being given to the growth of fruits and vegetables. Shipments have already attained vast proportions and are rapidly increasing. Fruits common to the temperate zone flourish in all parts of the Territory.

In Yakima and Kittitas counties considerable areas have been reclaimed by irrigation and are proving of enormous value. With water on the soils of this region all things are possible. Enormous crops of grain and vegetables are grown, while as many as five crops of alfalfa are reported as having been cut in a single year from tracts of irrigated land. Canal companies are being organized, bringing in water on an extensive scale. The plan of these companies is to lease water at a fixed price per acre irrigated, or to sell perpetual rights subject to a small annual assessment for repairs. In the central parts of the Territory, in Franklin, Adams, Douglas, and other counties, vast areas remain to be reclaimed. The introduction of water is, however, too expensive to be undertaken by individuals or private corporations. It is

hoped that within a few years the National Government will have devised and carried into effect a comprehensive system of water supply for this and other arid regions in the West, and thus solve the problem of providing homes for the homeless.

The lands which have been brought under cultivation in the Puget Sound section, while much less in extent than on the east by reason of the great cost of clearing, are exceedingly fertile. Immense crops of hay, oats, and vegetables are produced along the bottom-lands of the rivers.

GRAIN.

The great staple of eastern Washington is wheat. The volcanic soil of that region is peculiarly adapted to the growth of all cereals, the average yield being perhaps greater than that of any other grain-growing district in the United States. With proper cultivation the yield of wheat is seldom less than 25 bushels per acre, while it frequently reaches 50 and even 60 bushels. Corn is grown successfully south of Snake River, where it yields about 30 bushels per acre. Barley yields an average of 30 bushels and is of very superior quality, being preferred by Chicago and Milwaukee brewers to that of any other section.

The following table gives the average yield per acre of ten of the chief wheat-producing States:

State or Territory.	Bushels.	State or Territory.	Bushels.
California.....	15.8	Pennsylvania.....	13.4
Dakota.....	10.6	Virginia.....	8.6
Minnesota.....	11.3	Oregon.....	16.8
New York.....	15.7	Illinois.....	15.5
Ohio.....	18.0	Washington.....	23.5

This table places Washington in the front rank. A peculiarity of the soil of eastern Washington is its apparently inexhaustible fertility. Farms which have been cropped successfully for twenty years show no decrease in yield. This is said to be due to the presence of a large percentage of potash and soda in the soil. There are different grades of fertility in these soils, dependent largely upon the rain-fall. Walla Walla has 17 inches and is marvelously productive. Localities which have less than 15 inches require irrigation to insure successful farming.

In the Palouse region, north of Snake River, the rain-fall is greater than at Walla Walla, while in Yakima County it is less. The lands of Yakima yield enormously when irrigated, the value of lands which are so situated as to be susceptible of irrigation being very great.

The varieties of wheat usually grown in Washington are Little Club, Blue Stem, and Red Chaff. They are sown in either fall or spring. Freight rate from Walla Walla, the center of the wheat-producing region, to a sea-port at Portland, Oregon, or at Tacoma, is \$4.70 per ton, or 13.1 cents per bushel. The methods of harvesting are the same as prevail in California. The wheat is sacked in burlap grain-bags at the thrasher. It is then piled in the open air, where it frequently remains for several weeks without shelter, until it suits the farmer's convenience to haul it to the railway station. Elevators for storing grain in bulk have recently been constructed along the lines of the Oregon Railway and Navigation Company and of the Northern Pacific, and an effort is

being made to induce the farmer to abandon the system of sacking grain in the harvest field.

No insect or other pest infests the grain of Washington. The average price for wheat in the interior is about 55 cents per bushel. The cost of growing, harvesting, sacking and delivering at the railway stations is about \$9 per acre. The product per acre, 25 bushels, at 55 cents per bushel, is \$13.75, or an average profit of \$4.75 per acre, for careful farming on good land in an ordinary season.

Below is appended a statement of wheat and other products shipped from certain stations in Washington, on the lines of the Oregon Railway and Navigation Company to Portland, Oregon, and on the Northern Pacific to various points east and west, for the year ended June 30, 1889.

Statement of wheat, flour, barley, and wool originating and forwarded from Oregon Railway and Navigation stations in Washington Territory during the year ending June 30, 1889.

From—	Wheat.	Flour.	Barley.	Wool.	Total.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Wallula Junction.....		1.4		49.2	50.6
Touche.....	133.0			38.3	171.3
Walla Walla.....	19,174.3	2,795.4	1,597.9	37.5	23,605.1
Prescott.....	608.7	2,282.4		4.7	2,895.8
Bolles Junction.....	2,002.3		15.0		2,017.3
Alto.....	2,775.4		17.0		2,792.4
Starbuck.....	2,409.8		17.8	108.3	2,535.9
Riparia.....	1,752.7		470.0	219.8	2,442.5
Snake River Landings.....	14,260.0	15.7	135.0	186.4	14,597.1
Winona Junction.....				7.5	7.5
Endicott.....	4,208.0	1.0	22.5	31.1	4,262.6
Colfax.....	11,677.7	221.7	2,378.0	3.6	14,281.0
Garfield.....	1,674.6	108.9			1,783.5
Farmington.....	4,313.6	14.0	585.6		4,913.2
Tekoa.....	50.0				50.0
Latah.....	975.8	27.8			1,003.6
Rockford.....		125.4			125.4
Heppner.....	10.0	1.0		485.9	496.9
Waitsburgh.....	8,817.8	2,990.1	160.0		11,967.9
Dayton.....	11,963.4	4,065.7	2,370.9	3.6	18,403.6
Pomeroy.....	12,162.3	988.4	1,664.7	50.4	14,865.8
Connell.....	636.3	21.7			658.0
Pullman.....	4,858.9	10.1	23.5		4,892.5
Total.....	104,464.6	13,670.7	9,457.9	1,220.3	128,819.5

Statement of commodities forwarded from Northern Pacific stations in Washington Territory during the fiscal year ending June 30, 1889.

Commodities.	East bound.	West bound.	Total.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Wheat	34,326.3	59,892.2	94,218.5
Grain (other than wheat)	10,994.5	2,441.7	13,436.2
Flour	5,173.4	4,565.7	9,739.1
Mill products	1,762.7	1,120.0	2,882.7
Hay	6,112.8	5,502.0	11,614.8
Fruit and vegetables	3,746.9	1,105.5	4,852.4
Livestock	13,761.7	9,231.8	22,993.5
Dressed meats	310.8	77.8	388.6
Other packing-house products	198.4	88.4	286.8
Poultry, game, fish, etc.	3,139.2	41.4	3,180.6
Wool	529.7	501.4	1,031.1
Hides and leather	159.4	440.1	599.5
Anthracite coal	.1	76.5	76.6
Bituminous coal	39,136.7	283,517.6	322,654.3
Coke	701.7	2,692.3	3,394.0
Ores	283.8	2.6	286.4
Stone, sand, etc	882.4	10,587.8	11,470.2
Lumber	54,472.2	22,133.1	76,605.3
Other forest products	30,489.1	34,558.9	65,048.0
Petroleum and other oils	870.9	373.9	1,244.8
Sugar	8,285.3	18.1	8,303.4
Iron (scrap)	278.8	238.6	517.4
Iron and steel rails	3,318.3	616.8	3,935.1
Other castings and machinery	1,349.4	1,014.1	2,363.5
Bar and sheet metal	1,082.3	280.7	1,363.0
Cement, brick, and lime	2,454.5	6,009.1	8,463.6
Agricultural implements	333.7	77.1	410.8
Wagons, carriages, tools, etc.	522.2	339.4	861.6
Wine, beer, etc.	658.1	168.4	826.5
Household goods and furniture	1,157.2	821.6	1,978.8
Merchandise	19,750.8	6,239.8	25,990.6
Miscellaneous	14,854.6	5,974.5	20,829.1
Tea	6,045.3	6.4	6,051.7
Foreign companies' equipment	508.7	7.2	515.9
Construction material	7,629.4	2,399.7	10,029.1
Total.....	275,281.3	463,162.2	738,443.5

Receipts of grain at Tacoma were approximately 2,000,000 bushels; at Portland, 4,000,000.

Large quantities from the Walla Walla section were shipped to Denver, Colo., during the past year for milling purposes. From the region north of Snake River, extensive shipments were made to Duluth, and considerable quantities were consumed by the flouring-mills at Spokane Falls.

The total export for the crop year ended June 30, 1889, was approximately 7,000,000 bushels. It should be remarked that the crop fell short of its usual average on account of the light rain-fall.

This industry is susceptible of indefinite expansion, only a small percentage of the lands suitable for grain-growing having yet been brought under cultivation.

HOPS.

Hops are the peculiar product of western Washington, although they are also grown successfully and yield abundantly in the Yakima and Walla Walla Valleys. The manner of their cultivation having been described in former reports, little more than statistics will be given at this time. To J. P. Stewart, esq., a pioneer hop-grower of Puyallup, I am indebted for most of the following facts.

At the time of writing, the shipment for the present year has not been ascertained. That for the year 1888 is shown in the following table :

Station.	Bales.	Weight.	Station.	Bales.	Weight.
		<i>Pounds.</i>			<i>Pounds.</i>
Seattle	11,352	2,220,659	Enumclaw	57	10,720
Tacoma	547	109,861	Chehalis	305	58,119
Puyallup	10,790	1,963,956	Tenino	64	12,457
Sumner	5,934	1,176,409	Kalama	63	12,669
Slaughter	3,987	792,254	Buckley	522	96,913
Orting	1,880	384,481	Media	592	112,862
Kent	4,349	859,436	North Yakima	1,640	313,250
Winlock	196	38,826			
Bucoda	142	27,635	Total	42,482	8,202,287
Lake View	62	11,781			

The average yield in Pierce and King Counties for last year was 2,000 pounds to the acre. The yield per acre will be somewhat less this year, but, owing to the increased acreage, it is estimated that the aggregate shipment will be about the same. Mr. Stewart states that he has been a hop-grower in the Puyallup Valley for eighteen years, and the average price for his hops has been 20.4 cents per pound. The highest price he has ever received was 58.5 cents in 1882; the lowest was 6 cents in 1878. As the cost of production rarely exceeds 9 cents per pound, it is seen that the crop is usually very profitable.

Further, Mr. Stewart writes :

We have feared that we would have to limit our acreage on account of scarcity of pickers, as in years past some fields have been left unpicked for lack of them, but the tide of immigration flowing in upon us during the past year has given us a superabundance of this help. Our uplands, that are not well adapted to the growth of hops, are being settled by the hardy pioneer, who will not be slow in removing the forest and the stumps, and making in their stead meadows, pastures, and orchards of prunes, plums, peaches, and apples. This upland is to the valley land in the proportion of ten to one, and is as much better adapted to the growth of the fruits named as the valley land is to the growth of hops. So, while the upland is being cleared and homes made upon it, the hop-grower will be a necessity to many of those who live there, as they in turn will be a necessity to the hop-grower. Whole families will come from the uplands, pass a month in the hop fields, and thereby earn a year's supply of sugar, flour, and other necessities of life.

TOBACCO CULTURE IN WASHINGTON.

The following article is from the pen of Mr. William Kerr, president of the Moxee Land Company :

I was led to try the experiment of raising tobacco in Washington Territory in 1887. My friend the late Dr. Jorgensen, in company with Governor Miles C. Moore and other gentlemen, was discussing the possibility of raising a high-class tobacco in this country. He expressed himself as having no doubt that the thing could be done. From his experience in Virginia he was admirably qualified to form a correct judgment in the matter, and he fortified his opinion by reasoning so sound as to convince me that he was right. Among other things, I remember he said that he had submitted a sample of the soil to the late Professor Henry, of the Smithsonian. Professor Henry, after analysis, said that the soil was peculiarly adapted to the growth of tobacco. I tried the first year Havana, Sumatra, and Virginia seeds. The Sumatra did not do very well, while the Havana and Virginia were a distinct success.

The next season I put in Havana seed alone, mainly for the reason that this class of tobacco commands a better price, and has at present a better market than the larger and cheaper grades.

When factories for the handling of these coarser tobaccos are established in this country, however, it will pay the farmer well to grow them.

So far we have not used any fertilizer on our tobacco land. There was much to learn both in growth and curing, and the following is a brief statement of our methods and success so far :

The plants are raised in beds and transplanted.

We sow one-half ounce of seed in a bed one rod square, raising plants enough for 3 acres of ground, the plants being set about 2 feet apart.

The first hot-beds are sown during the first half of April. If more than one bed is desired they should be sown at intervals, so that the plants may not become ready to put out at the same time, and so hamper the grower.

After the middle of April, if the season is not unusually cold, open beds may be sown, and the plants will be ready for the last setting.

The tobacco field should be prepared by careful cultivation, and should be thoroughly irrigated. The plants may be put out when they are from two to three inches high.

Till the plants take root and begin to grow they should be well watered, but afterwards very little water and constant cultivation are required.

The crop matures in from sixty to eighty days.

After the plants have budded and before they blossom they are "topped," leaving not more than twelve leaves on the stalk, the "suckers" are then removed constantly until the plant is cut.

When ripe the leaf will be mottled with light spots, and will be quite brittle in the cool of the day.

It is then cut and left in the sun till it is thoroughly wilted, then strung on a lath (six to eight plants on each lath), and hung in the curing-house. The laths are placed about 4 inches apart.

Our climate in eastern Washington is so dry that artificial moisture is required in curing. This may be partially supplied by flooding the ground which forms the floor of the curing-shed, but we have found it necessary to supplement this by steam. A vat is placed outside, with a steam-pipe running into the shed. The latter is closed up and filled with steam, under the action of which the tobacco rapidly becomes soft and pliable. In damp weather, of course, this treatment is not required; but in the usual warm dry weather of eastern Washington it should be repeated at intervals of about two weeks. After the plants become moist, the house is gradually ventilated till they become dry. This is repeated till the tobacco is thoroughly cured, which should be about the first of February. It is taken down (while moist), stripped from the stalk, sorted into grades, and packed into cases containing usually about 300 pounds each, in which it goes through the sweat which prepares it for the manufacturer. Time is saved and the tobacco improved by putting it through an additional artificial sweat. For this purpose an ordinary box stove, with pipes running into a water-pan in the bottom of the sweat-box, may be used—the case being put in bodily.

In this district the growing and harvesting are much the same as in the old tobacco districts. We consider from 800 to 1,000 pounds of Havana per acre a good crop so far.

Our last crop had much more gum than either of the preceding ones. I ascribe this to increased dew, consequent on the increase of irrigation in the valley and increased knowledge in the matters of cultivation and watering. Great care should be taken not to give the plants too much water after they have fairly started to grow, as the tobacco will then cure more easily and better.

That the method of curing which I have described is successful, is proved by the quality of the cigars we manufacture. The flavor of our tobacco is said by experts to approach more nearly to that of Havana than any other tobacco grown in America, and the cigars meet with the practical approval of constant use by the most critical smokers. That tobacco culture is one of Washington's greatest resources would seem to be fairly proven.

The analysis referred to on the first page of this article is appended.

U. S. DEPARTMENT OF AGRICULTURE, DIVISION OF CHEMISTRY,
Washington, D. C., July 24, 1885.

DEAR SIR: I am much obliged for the answer in regard to the samples of soil you forwarded to this Department, and now take pleasure in sending the complete analysis of the seven air-dried soils.

Judging from what we know of soils of similar origin in Europe, where vineyards have been in cultivation for over fifty years with a large yearly yield, as in the Rhine and Mediterranean regions, soils arising from the disintegration of volcanic rocks are very fine in texture, dark in color, and of great fertility. Climate, however, would have great influence on the character of the crops raised.

From an inspection of the analysis, these soils will be found to have an abundant supply of the important soil constituents, and will prove, probably, very enduring and produce a great variety of crops. In their contents of nitrogen, with the exception of 1660 and 1661, they are, however, somewhat deficient; this would indicate that ammoniacal manures would have to be applied in the future when the soil should

become unproductive by excessive cropping. The large amount of soda, as well as of potash, is remarkable. The samples have been numbered and designated as they were marked when received.

Respectfully, yours,

EDGAR RICHARDS,
Assistant Chemist.

Hon. JOSEPH JORGENSEN,
Walla Walla, W. T.

The following tables shows the analysis of air-dried soil :

Composition.	1656. Sandy soil from 5 miles north-west of Umatilla, Wash.	1657. Surface in Grant's Ranch, Sec. 24, T. 11, R. 24	1658. Two feet square in Grant's Ranch, Sec. 24, T. 11 R. 25.	1659. T. 8, R. 26.	1660. Sec. 26, T. 7, R. 26.	1661. Middle of T. 8 N., R. 27, between Yakima and Colorado River.	1662. Sec. 12, T. 8, R. 28.
Moisture.....	0.525	1.300	1.950	1.600	0.675	1.325	1.125
Insoluble silica.....	78.602	62.140	65.630	63.640	71.585	67.575	64.864
Hydrated silica.....	5.983	17.600	16.485	16.105	11.480	13.925	11.685
Soluble silica.....	.275	.260	.275	.470	.370	.575	.385
Sesquioxide of iron ..	3.920	4.850	5.248	5.056	4.250	4.370	4.768
Alumina.....	4.698	6.738	6.818	5.740	5.320	5.510	6.238
Phosphoric acid.....	.192	.192	.224	.224	.216	.224	.224
Lime.....	1.338	1.423	1.329	2.099	1.418	1.428	1.449
Magnesia.....	.703	.659	.465	1.411	.973	.947	.991
Potash.....	.440	.495	.475	.545	.535	.940	.700
Soda.....	1.690	1.560	1.070	.830	.945	1.255	.700
Sulphuric acid.....	.043	.052	.060	.060	.052	.035	.129
Chlorine.....	.020	.015	.020	.030	.020	.007	.014
Carbonic acid.....	.005	.002	.116	.110	.090	.116	.030
Volatile and organic matter.....	2.045	3.573	3.584	2.040	1.885	1.559	2.600
Total.....	100.479	100.844	100.750	99.969	99.818	100.157	100.368
Nitrogen.....	.044	.089	.075	.069	.140	.224	.067

STOCK-RAISING.

Stock-raising, though still a profitable industry, is relatively diminishing in importance. Large areas of what was formerly stock range have been converted into grain fields. The stock-grower with his herds is constantly being forced back for range to localities remote from railroads where farming can not yet be profitably carried on. Returns under this head made by the county assessors are very incomplete, few having made any enumeration whatever. Deliveries of wool at the various railway stations indicate the number of sheep within the Territory to be about 700,000. Of the number of cattle and horses no reliable estimate can be made. The native bunch-grass, which by the natural and long-continued dryness of the atmosphere is cured as it grows is a wonderfully nutritious grass. Horses, cattle, and sheep thrive upon it summer and winter, and with the exception of unusually severe seasons require no other food. These grasses start very early in the spring, grow rapidly and mature by the first of June. There are still considerable areas of these bunch-grass grazing lands in the eastern and northeastern parts of the Territory, where stock-growing is profitably carried on. By reason of the encroachment upon the ranges heretofore referred to, many of the stock-men are securing from the Northern Pacific Railroad Company and from the Government lands near the ranges, which they inclose for pasturage and provide feed as an insurance against severe weather. Herds are being constantly improved by importation of improved strains. Many sections of the Territory have been found to be adapted to the growth of alfalfa. This will undoubtedly be the feed of the future after the disappearance of the native grasses. The various railway lines provide excellent facilities for the shipment of live stock. Good markets for a considerable por-

tion of the cattle and sheep are found at Portland, Oregon, in the Puget Sound towns in British Columbia, and in the mines of Idaho and Montana, while occasional shipments are made as far east as Chicago.

MINING.

Coal mines.

There are at present twelve developed coal mines in Washington, upon which work is being steadily prosecuted. Eleven of these are on the western and one on the eastern slope of the Cascade range. The largest coal-field lies south of the Snoqualmie River between Puget Sound and the mountains. Along the Skagit River and west of Bellingham Bay is a smaller and yet an undeveloped field. Beds of another, presumably of a later geologic period, are found in the coast range west of Puget Sound. In the valley of Chehalis and the Skookum Chuck about Centralia extensive deposits occur.

In the Green River and Wilkeson fields bituminous coals are found. The best grades of the Wilkeson coal is made into coke. The Newcastle coal is a high-grade lignite. Cost of mining at Newcastle averages \$1.10 per ton.

The only mines at present developed in the Yakima and Wenatchie district on the eastern slope are at Roslyn. The output for 1889 was 230,000 tons. These mines belong to and are worked by the Northern Pacific Coal Company. A branch road, 4 miles in length, connects Roslyn with the Northern Pacific main line. The coal consumed throughout eastern Washington is supplied chiefly from this point. It is bituminous in character, black, firm, and free burning. It is used chiefly by the Northern Pacific Railroad Company for its locomotives.

A vein of anthracite is reported to have been recently discovered on the Wenatchie, not far from North Yakima, but no authentic information regarding it has been received.

The first coal shipped from this Territory was from the Seahome mines on Bellingham Bay. Being of an inferior grade of lignite, work was suspended when other mines of better quality were developed.

Comparative statement of coal mined in first and second districts for years ending September 30, 1888 and 1889.

Name.	1888.	1889.
<i>First district.</i>		
	<i>Tons.</i>	<i>Tons.</i>
Bucoda.....	49, 160	26, 600
South Prairie.....	36, 149	45, 107
Wilkeson.....	2, 300	6, 738
Carbon Hill.....	203, 702	195, 387
Tacoma Coal and Coke Company.....	14, 371	8, 081
Total.....	305, 682	281, 913
<i>Second district.</i>		
Franklin.....	182, 921	136, 844
Black Diamond.....	186, 522	105, 255
Cedar Mountain.....	52, 813	23, 120
Gilman.....	13, 528	41, 482
Roslyn.....	234, 201	230, 548
Newcastle.....	158, 134	76, 122
Durham.....		22, 319
Total.....	828, 119	635, 690
Output first district.....	305, 682	281, 913
Output second district.....	828, 119	635, 690
Total output.....	1, 133, 801	917, 603

The decrease in the shipments of coal is largely due to the competition of the British Columbia mines and the decline in price in San Francisco and other markets.

In the mines comprised in district No. 1, 1,967 men were employed; in district No. 2, 578, a total of 2,545. But seven fatal accidents have occurred during the year, which, according to Inspector Sullivan, is a lower percentage in proportion to the output than is shown by the statistics of any other State or Territory. This fact indicates that there has been a disposition to respect the laws regarding ventilation and operation of mines, and that the management has been careful, intelligent, and humane.

Geological.

The following article by Prof. Thomas Condon, of the Oregon State University, will be read with interest:

The oldest geological portion of Washington Territory lies along its eastern border. Here the outlying foot-hills of the Blue Mountains, the Bitter Root and the Cœur d'Alene Mountains form an irregular belt of rocks ranging in age from the Carboniferous to the Cretaceous.

During the long time of the deposition of these older rocks of the interior, the Pacific Ocean flowed unhindered over what is now eastern Washington. The Cascade range was not yet elevated above the ocean. This period was that in which the first chapter of the geological record of Washington Territory was outlined on its rocks. It was at its close that the ocean deposited a cretaceous fossil sea-beach along the foot-hills and outlying spurs of these older lands of the interior.

During this older geological period there had been progressing an agency of change along the present line of the Cascade Mountains, then 150 miles out to sea. The future Cascade range was steadily rising from the ocean bed. Its progress had been first a shoaling of the sea-bed, then a line of islands, now an elevated belt of land high enough to effectually shut out the Pacific Ocean from the interior.

As before intimated, the last visit of the ocean to the Blue Mountains left its trace in a fine fossil sea-beach that to-day marks the farewell work of the ocean there. The elevation of this new land changed the sea-shore to the western declivity of the Cascades, and it was here along the slopes of these mountains that conditions for coal deposits were renewed. The climate was moist and every way favorable for the work, and a grand coal-field, extending from what is now the line of the Upper Cowlitz to Bellingham Bay, was the result. Later these coal-beds were sunk in level and covered by other sediments which secured their preservation a permanent coal.

While this coal-field was thus storing away its acres of fossil wealth, other changes were progressing out to sea again. As before, first a shoaling of the ocean bed began to extend, then a belt of islands, and lastly the whole became elevated into what is now known in Oregon as the coast range, extending into Washington in broken links, one of which is the Olympic range, and continuing northward through the highlands of Vancouver Island and Queen Charlotte's Islands.

There resulted from this second upfolding of sea bed into mountain mass a geological depression or trough between these ranges. This in Oregon became what we now call the Willamette Valley, and its northern extension, the Cowlitz Valley, and finds its extension into Washington Territory in the depression we call the "sound country," with continuance still farther northward. After the close of the Cretaceous period, as already stated, the ocean was excluded from eastern Washington, but had still full access to the sound region.

It followed that rock making sediment in the interior, later than Cretaceous, would be fresh water, while rock making sediments west of the Cascades would continue to be marine.

Such are the marine sediments of the valley of the Cowlitz, those of the Chehalis Valley, the older rocks of the sheltered places along the coast not covered up by eruptive rocks, and lastly those places around the sound that were covered by these Tertiary waters.

In a few localities, as along the Cowlitz and Columbia, there were coal deposits during these Tertiary times, but these are lignites, inferior in worth and extent.

At the close of the Tertiary period yet another agency of change was introduced in Washington Territory, as elsewhere, in the glacial ice. In its direction and in its force it was modified in Washington and Oregon by the mountain ranges. The ice sheets of which it was composed plowed and planed gorges in the mountains, transporting the chips of its workshops out over the space now occupied by the waters of

the sound, thus strewing fragments of granite and slate over the surrounding region. The fine masses of granite found now in the streets of Tacoma and Seattle are all from these sources.

During the period following these glacial times, the land along our northern coast sank to a lower level; in other words, the waters stood relatively higher, and these waters distributed the mud and gravel of the glaciers over the spaces thus flooded, forming many of the light colored bluffs of the sound, those of like position around Shoalwater Bay and Gray's Harbor.

These waters of the Champlain period did more. They backed up the waters of the Columbia River over the Yakima Valley and the valley of Walla Walla, covering in their sediments the fossil remains of the ox, the horse, and the elephant.

After this Champlain period the surface slowly changed into the forms and conditions in which we now find them.

The gold-bearing slates, the limestones and marbles of eastern Washington belong, then, to the older periods before the Cretaceous.

The coal-bearing belt of the western slope of the Cascades, from Tenino to Bellingham Bay, belongs to the early Cretaceous.

The sand stones, so full of marine shells of later type, so abundant in the foot-hills that border the sound, the Cowlitz and the Chehalis, as also the lignite coals of the lower Cowlitz and the Columbia, belong to the Tertiary.

The drab-colored bluffs that border the sound containing bones of the elephant, the like deposits that border Shoalwater Bay and Gray's Harbor containing recent marine shells, and also like sediments in the Yakima and Walla Walla Valleys, all these are Quarternary.

Gold and silver mining.

Gold and silver are found in paying quantities in several of the counties of the Territory, notably in Kittitas, Okanogan, Douglas, and Stevens. In Okanogan County numerous veins rich in gold and silver have been located. Owing to the lack of transportation facilities development has been slow. The following extract made by the late Professor Clayton, an eminent authority on mines, will be found of interest to mining men. It relates chiefly to the Ruby district of the Okanogan mining region:

The principal mines of the district are on the southwest side of Conconnully Creek, in the high ridge locally known as "Ruby Mountain." This ridge rises abruptly from the creek to a height of 2,500 feet. Its crest extends in a southeasterly and southerly course, forming the Conconnully and Louploup Creeks.

The country rock of Ruby district is, in most part, granite, gneiss, mica, and hornblend schists, all presenting a coarsely bedded structure, uplifted, or folded to nearly vertical positions, having a general trend from northwest to southeast, and dip northeast at angles varying from 60 degrees to nearly vertical. These bedded lines of the granite schists cut through the mountains ridge on very oblique angles—say 15 to 20 degrees—the longitudinal axis of the ridge being 15 to 20 degrees more southerly than the course of the bedding planes of the country rock.

The general aspect of the country rock is coarse feldspathic granite, with alternating bands of hornblendic, and micaceous schists of coarse granite structure. No true slates are seen in the district. The formation is evidently of primordial types, probably belonging to the Archian series.

The width of this zone of gneissoid granites and schists is at least two or three miles, flanked on the southwest side by massive granites of great extent, rising into high mountain ranges to the west.

THE MINES.

The mineral belt or zone, so far as known, in Ruby district is two or three miles wide, and is confined to the granitic bedded formations above described. By far the largest of silver-bearing lodes in the district are substantially conformable to the dip and strike of the schistose rocks, having a general course nearly SE.—NW. magnetic, and dip (NE.) varying from 50 degrees to nearly vertical positions. While the general strike and dip of the bedded structures of the country rock hold their courses as stated, the local variations are very numerous, both as to strike and dip.

There are two or three lodes in the district that have a course nearly north and south, and dip east at high angles, varying from 60 to 80 degrees below the horizontal plane. These cut through the bedded formations obliquely at angles varying from 30 to 50 degrees, thus marking them distinctively as *true fissure lodes*. The most

prominent of these N.-S. fissure lodes is the Arlington lode. (I do not mean by the above that the lodes that are conformable to the dip and strike of country rock are *not* fissure lodes also. I think all the principal lodes of the district are true fissure lodes. I arrived at this conclusion from the facts not necessary to state in this connection.)

From another authority I quote the following:

The geological formation belongs to the Archian series. The country rock consists for the most part of granite, hornblende, gneiss, and mica schists in nearly vertical positions. Their course is from northeast to southwest, with a northeast dip, at angles varying from 60 to 90 degrees. The width of this zone of coarse granitic structure is from 2 to 3 miles. The mineral belt of the district is bound to this formation of granite. Some of the silver-bearing lodes have the same dip and strike as the country rock, while others run nearly north and south, dipping east at angles varying from 60 to 80 degrees, and cutting obliquely through the bed formations at angles from 30 to 50 degrees. They are thus evidently true fissure lodes, and of these fissure lodes the most prominent is the Arlington. The Arlington lode is composed of true gangue, which carries the silver ore in disseminate grains of black sulphurets of silver, and of a brittle sulphuret closely resembling dark antimonial ruby silver. In addition to this is found galena, copper, iron, arsenical pyrites, and zincblend in small quantities, and gold.

Discoveries made in the Fourth of July, First Thought, Ruby, and other mines throughout the Okanogan country show ore of the same character as the Arlington lode. This fact forces upon us the conclusion that when subterranean forces uplifted or folded the granitic schists, cutting through the mountain ridge, there was formed an immense quantity of silver in solution, which filled the clefts and fissures, and thus formed the true fissure lodes.

The Arlington mine is at the southern end of the Ruby Hill group of mines, on the western slope of the mountains, about 300 feet below the summit. Its discovery was similar to that of a hundred other rich locations. A prospector found upon the ground a rich piece of drift. Nothing else was in sight, but he picked and shoveled away the earth until he came upon a ledge so richly mineralized as to nearly take his breath away. He associated with himself two or three others and they began to sink an incline shaft. Two years ago the mine came into possession of the Portland company, which owns it at present. The first work done by the company was to sink the development shaft to a depth of 105 feet. Work upon the shaft was then stopped and a tunnel was run in from the west to tap the incline at a depth of 210 feet. At a distance of 418 feet the ledge was struck. From the station where the tunnel cuts the ledge a drift has been run south 210 feet, and north 335 feet. The width of the lode between the foot and hanging wall is variable, but gradually widens with the depth. At the working shaft at the surface it was 6 feet wide; 60 feet below the surface it was 8 feet, and the portion now opened by the tunnel and drift is from 20 to 35 feet.

From these facts and from the physical character of the ledge we conclude that this mine, being on a true fissure lode, of great strength and permanence, with a tenure of silver much above the average of workable silver mines, will carry good ore to a depth as great as modern appliances will enable men to work it. The block of ground now entirely explored by the shaft, surface cross-cuts, and tunnel, contains millions of ounces of precious metals.

Since this report was made reduction works have been erected at the Arlington mine, which is regarded as the strongest vein in the district. It is from 3 to 9 feet wide, and assays as high as \$187 in silver to the ton.

The First Thought, the Ruby, and Fourth of July are all promising properties. Numerous other locations, which will ultimately prove valuable, have been made in the Ruby district. In the Salmon River district the Tuff Nut, the Mammoth, the Lone Star, the Home Stake, the Minnehaha, and Salmon Creek are most prominently mentioned. There are also numerous good locations in the Galena district.

The Washington Central Railway, a branch from the Northern Pacific main line, running westward from Cheney, is projected, and will soon be completed to the vicinity of these mines. Under the stimulus of cheap and sufficient transportation these mines will have rapid development, and Washington will take rank among the silver-producing States.

In Stevens County the Old Dominion is still the principal ore-producer. Numerous other properties will be opened and worked when the Spokane and Northern Railway, now under construction, shall have been completed to Colville and the Columbia River.

Iron ore.

The iron ores of Washington consist of bog ore, limonite, hematite, and magnetic ore. Bog ore is found underlying the flats bordering Puget Sound; brown ore is found on the Skagit River. The largest beds of magnetic ore are found in the Cascade Mountains, from 1,200 to 1,500 feet above the water-courses. Large deposits of ore occur on the east side of the Cascade range, near the Cle-elum River, 25 miles from the Northern Pacific Railway. The ore is magnetic and assays about 66 per cent. This mine has been purchased for the Moss Bay Company—an English corporation—by Mr. Kirke. Extensive deposits are also found on the Snoqualmie River, on the line of the Seattle, Lake Shore and Eastern Railway. The ores of this mine are said to be of superior quality, and are what are termed typical steel ores.

I quote from the Tacoma Globe an interesting article relating to the coal and other mineral deposits of eastern Washington:

A gentleman who had a fine collection of minerals on exhibition in his window at Tacoma, on being interviewed by a Globe reporter, said: These minerals, embracing coal, iron, copper, lead, silver, and gold ores, come from the country immediately surrounding or directly tributary to Ellensburg. They are not only samples of valuable products, but they are samples from mines of established worth. Kittitas County coal is shipped into Montana, Dakota, and Minnesota to grade up the interior coals mined in those localities, while the Oregon Short Line and the Oregon Railway and Navigation companies are always ready to take any surplus the Northern Pacific may have. For steam and gas purposes this coal is first class, and for domestic uses it compares well with Ohio soft. Some 50,000 acres of coal land have been explored and a much greater area of coal bearing formation is yet to be investigated. The coal mines tributary to Ellensburg are not mythical as, although only in the first stages of development, the coal company's pay-roll ranges from \$40,000 to \$60,000 per month. The iron mines tributary to Ellensburg are of the same tangible substantial sort. English and American capital is engaged in their exploration, contracts have been entered into with the Northern Pacific company for the construction of branch lines for the development of these iron mines, and the English syndicate has only awaited our admission to statehood before beginning construction, for working of these ores, of a great iron and steel manufacturing plant the influence of which will be felt throughout the markets of the world. Equally stable are the gold placer and gold quartz mines of Kittitas County. No wild excitement attends their development, but each year a greater amount of placer and retort gold is sold in Ellensburg as the result of the employment of more men and better working equipment.

Aside from the coal, iron, and copper interests referred to, the most important mines represented in this collection are those of the Ruby, Conconully, Lime Belt, and Wannicut Lake mining districts of Okanogan County, the youngest and one of the richest subdivisions in undeveloped natural wealth of Washington Territory. The Okanogan mineral ranges extend from the Columbia River on the South up to and across the boundary line directly into the precious-metal producing districts of British Columbia that have so long paid rich tribute to the Crown. A massive lime belt traverses the entire region. Parallel with and on either side of the lime belt are situated the milling, smelting, and concentrating ore-producing mines. Silver ores, with more or less lead, predominate. The Okanogan mines are destined to cut a good figure in the commercial prosperity, not only of central Washington, but of the entire State. Equally distant from the progressive "rustling" cities of Spokane and Ellensburg, the trade of the Okanogan mines is naturally attractive by way of the latter city to Puget Sound. To the credit of Spokane energy and enterprise be it said, however, that continual improvement of transportation facilities between Ellensburg and these mines is necessary to permanently secure this trade for Puget Sound. The establishment of the Ryan smelter in this city is a great stride forward in this direction. Completion of the Ellensburg and Northeastern Railway, now under construction, will shorten the time consumed between tide-water and the mines over one-half.

The commerce resulting from development of the great diversity of mineral wealth of central Washington will ever prove a prize well worthy the best endeavors of the great business centers, and prosperity will attend the cities most vigorously therefor. Instead of being jealous of the cities situated in the mines, Ellensburg is interested

in promoting the prosperity of each because each additional person employed in or about the mining regions is an additional consumer of the products of her surrounding area of rich agricultural lands and is in consequence an indirect patron, at least, of her mercantile houses.

The Union Iron Works of San Francisco have smelting works at Irondale, near Port Townsend. The pig-iron smelted here has been proved equal to the best produced in the United States. The material used in the construction of the U. S. cruiser *Charleston* was smelted here.

BUILDING STONE.

Granite is found in the Cascade Mountains, in the vicinity of Spokane Falls, and along Snake River, in Garfield and Whitman Counties. The Territory has a quarry of this valuable stone on the site purchased for the Hospital for the Insane at Medical Lake, in Spokane County.

A fine, greenish-gray sandstone is furnished in large quantities by the Chuckanut quarries on Bellingham Bay.

Marble has been discovered at points near the Spokane and Northern Railway, in Stevens County, and in other localities. Also a superior article of fine clay, suitable for fire-pottery and fire-brick.

Limestone.

The principal deposits of limestone occur on the islands in the San Juan Archipelago, where there are unlimited quantities of the finest limestone, averaging over 90 per cent. pure lime. These are the only limestone quarries being worked to any considerable extent. The cities of Puget Sound, Portland, Oregon, and in fact nearly the entire Pacific Northwest are supplied from these kilns. Limestone and marble are found in conjunction with iron ore in the Cascade Mountains, and have great value, not only for flux, but also for commercial purposes.

FORESTS AND THE PRODUCTION OF LUMBER.

Lumbering was the first industry developed in Washington Territory, and is still the most important. The entire western slope of the Cascade Mountains down to the Pacific Ocean is covered with a dense growth of the finest timber. The area of this timber tract is estimated at 20,000,000 acres. The Douglas fir, known in the markets as Oregon pine, constitutes the greater part of the forests—probably one-half—and is the most valuable. Trees of this variety 200 feet in height and 10 feet in diameter are not uncommon. Last year a lumberman shipped to San Francisco a stick of this timber 24 inches thick and 154 feet long. Colonel Griggs, of the St. Paul and Tacoma Lumber Company, upon examining timber lands two years ago with a view to purchasing, found a 40-acre tract which he estimated would cut 250,000 feet to the acre, counting no tree to cut less than 5,000 feet. Mr. G. P. Rogers, in the *Whatcom Reveille*, says: "Our land will cut 10,000,000 feet of lumber to the quarter-section—mostly fir, with a sprinkling of cedar. One fir tree is 300 feet high and 44 feet in circumference. It is 75 feet to the first limb, and at that point it is 10 feet through." The same paper adds: "Much of the timbered lands of the county will yield 12,000,000 feet to the 160 acres, and there is, at a low estimate, an average of 1,500,000 feet of lumber to the square mile throughout the entire county."

These instances, which might be multiplied indefinitely, are men-

tioned as indicating the wonderful growth of timber in the Puget Sound region. Many saw-mills of great capacity, equipped with all modern appliances, are in operation at various points along the Sound, at Gray's Harbor, and on the Columbia River. Steam-power is the chief reliance at present, and as fuel is exceedingly cheap will no doubt continue to be the power employed.

As the shores of the bays and inlets and the tributary streams are denuded of their timber, logging railroads are constructed into the forests. A number of these are already in operation.

The annual cut, which is something enormous, is shown in the tables below. The lumber market of Puget Sound is, in the language of Mr. Cyrus Walker, a member of the Puget Mill Company, "all countries and ports on the Pacific Ocean." A partial list of these ports is given below with the view of demonstrating more clearly the extent of the market, which is open to the mill men of Washington. Actual shipments are made yearly to each of these ports: Melbourne, New Caledonia, Ensenada (Mexico), Shanghai, Valpa, Hilo, Adelaide, San Diego, Honolulu, Callao, Guaymas, Iquique, Autofogasta, San Francisco, Cadera, West Coast, San Pedro, Sydney, Montevideo, Sandwich Islands, Rio de Janeiro, Kohalui, Townsville, Brisbane, Hong-Kong, Mollendo, Falmouth, Taku, Suava Fuga Islands, Broken Bay, Coquimbo.

As nearly as can be ascertained, the number of saw-mills in Washington is 181; shingle-mills, 71; planing-mills, 162, and logging railroads, 22. Many of the saw-mills are of great capacity.

My predecessors have spoken of the destructive forest fires that annually sweep over the timber region. No remedy has yet been devised. It is hoped the State legislature, soon to convene, will, by the enactment of stringent laws, be able in some degree to prevent these fires.

Annual lumber cut for the year ending June 30, 1889.

	Feet.
Puget Sound Mills	540,000,000
Gray's Harbor Mills	100,000,000
Shoal Water Bay Mills	40,000,000
Columbia River Mills, Washington side	75,000,000
Total cut for export	755,000,000

There are many mills in the interior, the product of which is shipped by rail and consumed locally, from which no statistics have been received. Along the line of the Northern Pacific Railroad, between Tacoma and the Columbia River, there are sixteen mills with an aggregate daily capacity of 400,000 feet. On this line there are also twenty shingle mills with a daily capacity of 900,000. Cedar shingles in considerable quantities are shipped to the States of the Mississippi valley. These shingles are in popular demand and the volume of the business is steadily growing.

The extent of the lumber trade of the Northwest, the vast capital, the shipping, and the number of men employed in carrying it on, should secure for it the attention and fostering care of the General Government.

LABOR SUPPLY.

No statistics are obtainable bearing directly on this subject. Information derived from various sources indicates that there is throughout the Territory a demand for all kinds of labor. The prices paid are somewhat higher than those prevailing in the States east of the Rocky

Mountains. The business portions of Seattle, Ellensburg, and Spokane Falls were destroyed by fire during the summer of the present year. The rebuilding of these cities has created an unusual demand for mechanical and other labor.

The average rate of wages paid at present is as follows:

Longshoremen	per day..	\$3.00
Bricklayers	do	5.00
House painters	do	2.50
Carpenters	do	\$3.00 to 4.00
Machinists	do	3.00 to 4.00
Blacksmiths	do	4.00
General laborers	do	2.00
Farm laborers (board included)	do	1.25
Mill hands	per month..	50.00 to 125.00

LABOR IN LUMBER CAMPS.

Foreman	per month, with board..	100.00 to 150.00
Teamsters	do	100.00 to 125.00
Choppers	do	75.00 to 85.00
Skidders and swampers	do	50.00 to 65.00
Hook tender	do	65.00 to 85.00
Sawyers	do	65.00 to 90.00
Cooks	do	50.00 to 65.00

It can readily be seen by the foregoing table that the wage-worker receives fully 50 per cent. more for his labor here than he receives for the same amount of skill in the Middle States. The above schedule is, if anything, placed at a low figure.

There is still an active demand for labor required in railroad construction. A few years since the Chinese were chiefly relied upon for railroad grading. The rigid enforcement of the Chinese restriction act has diminished the supply of these laborers and in their stead Caucasians are employed. Chinese are still the main reliance for house servants, for laundries, for market gardening, and for work in the salmon canneries. Hop picking is done mainly by Indians. They congregate in great numbers about the hop fields during the picking season, coming from British Columbia and from the various reservations throughout the Territory. At the Roslyn coal mines the experiment of employing negro labor is being tried by the Northern Pacific Coal Company, so far with satisfactory results.

There is a constant demand for good house servants. Girls who are willing to engage in domestic service find ready employment at highly remunerative wages.

In the lumber camps, in the coal mines, in the fisheries of the Puget Sound region, as well as in the cities that are springing up so rapidly, and in the great grain fields of the interior, there is abundant opportunity for all who are willing to work.

MANUFACTURES.

Aside from the manufacture of lumber and flour, Washington has little as yet to boast of in the way of manufactures. No State, however, is more abundantly supplied with water power, and no other has greater resources in raw material. The remoteness of Washington from the manufacturing centers, the long and expensive haul of our raw material to distant markets and its return in manufactured form, constitute a protection that should encourage and stimulate the establishing of local manufactories of every description.

Fine water-power is available on many of the streams flowing down from the Cascade range and emptying into Puget Sound, notably on the Snoqualmie, on Green River, and on the Des Chutes. At the mouth of the latter stream, near Olympia, there is available a 6,000 horse-power. In the east the Kittitass, the Yakima, the Walla Walla, Mill Creek, the Touchet, the Palouse all have rapid fall, and afford water-power every few miles along their entire length. The falls of the Spokane engender a power available for industrial purposes estimated by competent authority at 36,000 horse.

CONDITION OF THE INDIANS.

The total Indian population of the Territory, as near as can be ascertained, is about 10,000. The majority of these Indians live on reservations and are gradually adopting the habits of the whites. The total acreage of lands reserved for the tribes within the Territory is 4,086,148, or about 400 acres per capita. The reservations usually comprise the most fertile regions in their respective localities. The Yakima Reservation contains 800,000 acres. It is believed the allotment of these lands in severalty to the Indians would result beneficially to them and remove the cause of much discontent among the whites.

I am indebted to Edwin Eells, esq., of the Puyallup Agency, for the following account of the Indians under his care :

The Indians on the Nisqually, Chehalis, Puyallup, Skokomish, and Squaxon reservations having received patents for their allotments are citizens, having been made so by the provision of the Daniels' severalty bill. They vote, pay taxes on their personal property, are self-supporting, and civilized. Their land is inalienable until this Territory becomes a State, when the legislature, with the consent of Congress, can remove the restrictions and it becomes a title in fee simple. They are generally industrious, quiet, peaceable, and law-abiding, and make but little trouble.

Although they are citizens, the Government still continues to provide an agent for them, and to exercise a certain kind of jurisdiction over them, and to assist them to some extent. Their children are still educated at the expense of the Government, which also pays the expenses of small courts, composed of their own members, to regulate their intercourse with each other.

The Indians living on the Quinaielt Reservation are not citizens, their land never having been allotted. This reservation has never been subdivided, and the expense of surveying it into allotments would be very great compared with the proportion that is available for agricultural purposes. If the land along the river bottom could be surveyed, a part of it might be occupied, but most of the uplands are nearly worthless, and the undergrowth is so thick and the land so mountainous that it would cost a great deal to survey that part of it.

Besides the Indians living on the reservation, there are nearly half as many more that are not living on any reservation, but are still connected with the agency. These are scattered among the white settlements, some of them having homesteads, some having acquired land by purchase, some living near saw-mills, where they work, and others moving about, fishing, and living from hand to mouth.

According to the present laws the agent has no means of enforcing any authority over any Indians off the reservations, and as a large proportion of those in this agency are citizens it is easily seen that the authority of the agent is quite limited.

The citizen Indians make most of their living either on their farms or in other civilized pursuits. The Quinaielt Indians get most of their living by hunting and fishing. They get their money by picking hops and fishing for the canneries, which is very profitable.

Aside from the tendency of the Indians to drink, all under my charge are generally quiet and orderly. But as a very large proportion of them are very fond of liquor, and drink whenever they have an opportunity, situated as I am, it is not possible to do much to prevent this. By the aid of the police force and the courts of Indian offenses, it is measurably restrained on the reservations, although it is doubtful to what extent our authority extends over American citizens, even if on a reservation, but it is very much kept in check there. Off the reservations, however, it is impossible to do anything effectively to check it.

The lands of the Puyallup Reservation are immensely valuable. This Territory will soon be a State. Public opinion will press through the legislature at the earliest

possible moment, a bill removing the restrictions to the sale of their lands. In my judgment a part of these lands should be sold; but I do think it very desirable that a part of the reservation containing the homes of the Indians should still be protected for a term of years. Avaricious and unprincipled men would very soon crowd them all out if they had the opportunity. I think, however, that the laws should be so changed that the Indians should be allowed to sell even what is protected to each other, as the titles by descent are not satisfactory and are getting very much mixed. I think it would be advisable, too, that they should be allowed to rent to white men a part of this land under suitable restrictions.

There is not the same necessity for the Indians on the other reservations to be allowed to sell their lands, and I should not recommend it; but I do think that even on those reservations they should be allowed to sell to each other, so as to avoid this mixture of title resulting from the descent by inheritance.

SCHOOLS.

There are five schools belonging to this agency. The largest is on the Puyallup Reservation, and averages about eighty scholars. There have been three different head teachers during the year in charge, and the efficiency of the school has suffered in consequence. There has been a large and commodious boarding-house and school-rooms combined erected at that place during the year, which is now ready for occupancy as soon as the old buildings can be moved away. This will afford accommodations for half as many more scholars, and I hope to have a good school here soon.

The Chehalis and Skokomish schools are both on the reservations of the same name and both together have nearly as many scholars as the Puyallup school has. Their success has been fair.

The Quinaielt and Jamestown schools are both together the size of one of the latter schools, so that altogether there have been about two hundred scholars in attendance. They hardly kept up to the standard of previous years, but have done good work. Two causes operate against us. First, the Indians are slowly diminishing, and, second, the authority of the agent and his power to compel the attendance of the children has been curtailed. The schools are all supported by the Government and are all industrial boarding-schools, except the Jamestown school, which, although a day school, still has rations issued to the scholars.

The usual formula followed is for the scholars to rise soon after 5, do their morning chores, and prepare for breakfast by a little after 6. The morning work is then all done up, so that they can go into school by 8 o'clock, when study hours are till 12. The afternoons are devoted to industrial pursuits, the scholars being detailed to work under the different employés, as convenience and necessity dictates. After supper there is a free and easy study hour for the children in which there are no recitations, but singing and other exercises are interspersed, as is convenient.

The most serious matter to be considered with reference to the Indians and their children is their want of health. All are more or less diseased, and their systems are so weakened that they easily succumb to the attacks of any acute diseases that happen to prevail among them.

Two missionaries have labored among them during the year with fair success.

I omitted to say that owing to the annual pilgrimage of the Indians in this country to the hop-fields in September, the annual vacation is during that month with us, instead of in July and August, as with others. Besides, the crops have to be gathered and the weeding done by the scholars, and if there were no school during those months that work would be seriously impeded. There is also a short vacation of a week or ten days at the end of each quarter.

Our Indians seem to be very much like white people. They have not the sterling qualities, however, which will keep them up, but easily slide back to their former condition. Like all lower races they like their pleasure and willingly barter substantial benefits for fleeting pleasures.

W. H. Talbott, esq., of the Tulalip Agency, reports as follows:

A complete census for the fiscal year ending June 30, 1889, shows a population of 1,233 souls, divided as follows: Tulalip Reservation, 444; Lummi Reservation, 310; Snohomish Reservation, 229; Madison Reservation, 147, and Muckleshoot Reservation, 103; total, 1,233. Statistics for the fiscal year just closed show the following crops: Oats, 29,151 bushels; wheat, 90 bushels; onions, 6,000 bushels; potatoes, 11,225 bushels; turnips, 2,175 bushels; wool, 500 pounds; hops, 3 tons; hay, 769 tons. The Indians are nearly self-supporting, and receive very little assistance from the Government. We have an excellent school, which is supported by the Government and run under contract with the Catholic Indian Bureau at Washington, and under the immediate control of the Sisters of Charity, with a Catholic priest as superintendent. This school is in a flourishing condition, and furnishes ample accommoda-

tions for at least one hundred and fifty pupils. Average attendance throughout the year about one hundred and thirty. Nearly all the Indians have received their allotments, and are very generally clearing and cultivating their severalties. A special agent will be sent by the Department in the spring to complete the work and allot land to those not already holding patents. The sanitary condition of our Indians is not encouraging; there has been a slight decrease since last year, and we see them dying off gradually. This, if nothing else, will settle the Indian question in a few years. The monthly health report during the year continued about the same, with the exception of a few weeks during the small-pox epidemic last spring.

The greatest drawback to our Indians is whisky, and they can obtain it anywhere on the Sound. It has been a great source of annoyance to me, and I am sure causes more trouble than all other nuisances combined. All things considered, our Indians are doing very well and seem happy and contented.

Hal J. Cole, esq., of the Colville Agency, writes :

The tribes under my supervision in this Territory, occupying the reservations, are the Colvilles, Upper and Lower Spokanes, Lakes, Okanogans, San Puells, Joseph's band of Nez Percés, Moses' band of Columbias and Calispels.

The Upper Spokanes, known as "Louis band," are not fond of work, but prefer loafing around the city of Spokane Falls. Something should be done with these Indians. My idea would be to have them placed on some reservation and not allow them to leave there, and by that means they might be weaned from their bad habits and try to do something which would be more creditable to them.

The Calispel Indians are gradually being crowded out of the Calispel Valley by the whites, and some action will have to be taken by the Government in the near future or they will cause trouble, as they have threatened the whites. Troops from Fort Spokane and Fort Sherman were stationed in the valley during the month of August to prevent trouble.

The Lakes, Okanogans, and Colvilles are all getting along very well farming. Some of them have large farms, principally engaged in stock raising, having large herds. The Lower Spokanes, under Chief Whestleposum (Lot), is a very progressive tribe and doing well, trying to imitate the white men in civilized pursuits.

The Okanogans, under Chief Tonasket, occupying the country between Osooyoos Lake and the Columbia River are all engaged in farming and stock-raising, for which they have unsurpassed grazing grounds.

The Columbias, under Chief Moses, and the Nez Percés, under Chief Joseph, are occupying the country together on the Nespalem River. These people are industrious and intelligent, and have large bands of horses and cattle.

The Skolaskins band, of San Puells, occupying the country around Whitestone, are under Skolaskins's leadership. They are not a very progressive people. They farm on a small scale only. With a good man at the reins of the Government they could be self-supporting. They have good farming land if properly managed.

Captain Thomas Priestley, of the Yakima Agency, reports as follows :

There are supposed to be over 3,000 Indians of the Yakima Nation who are entitled to the rights of the reserve under the treaty of June 9, 1855, but at present, and for several years past, the number residing upon and making the reservation their headquarters is only about 1,700 of all ages. The remainder, I understand, are scattered throughout the adjoining States and Territories, some of them leading vagrant lives within the confines of white settlements, but by far the greater part of them are no doubt in the wilder regions of the country, where they are subject to less restraint than if upon the reservation.

Most of those upon the reserve are self-supporting and progressive. Many have extensive ranches inclosed and raise large quantities of horses, cattle, hay, and grain, besides as fine vegetables and fruits as any in the Yakima Valley. A few old and disabled, of both sexes, need and receive aid from the Government, but the number of this class, it is hoped, will diminish as the general prosperity and intelligence grows, when the young and able-bodied will be better prepared and more disposed to care for their aged parents and relatives.

Although the Government provides, on the reservation, school accommodations with a competent corps of teachers, furnishing books, clothing, subsistence, etc., all free, it is impossible to get one-half of the children of school age (about 275) to attend the school. This is almost entirely because of the adverse influence of the parents, who can not be convinced that it is better for their children to be reared and trained in the ways of civilization than in the ignorance and barbarism of their parents. The children who attend school, as a whole, are quick to learn, manifesting a capacity equal to the average of white children.

The present season the crops on the reservation are the lightest known for many

years, owing to the meager snow and rain falls last winter and spring, and the consequent lack of natural moisture in the ground and scarcity of water in the streams from which irrigation is secured. Not to exceed one-third of the usual products are raised, and instead of having wheat, oats, hay, vegetables, and fruit to sell, many have insufficient for their own use, and to feed their stock through the winter. Pasturage was never so scarce, and inevitably hundreds of horses and cattle must die of starvation before spring, unless the coming winter is exceptionably favorable.

The settling up of lands bordering on the reservation by white people, and the increasing demand for pasturage for the multiplying herds of sheep and cattle, brings the question of boundary lines into greater prominence annually, and soon some positive steps must be taken for its definite settlement. The Indian police are instructed to keep all stock, except that of Indians, off the reservation, and in the discharge of this duty necessarily come in conflict with stock-owners and herders, and disputes as to whether stock is on the reserve or not are frequent, the usual result being that the white man's stock feeds upon the Indian's grass without proper consideration. A feeling that his rights are not respected by his white neighbor is thus strengthened in the Indian and natural antipathy is increased.

A further grievance is the disregard, or at least serious abridgment, of the fishing rights of the Indians, secured to them by their treaty. On the Columbia River they were guaranteed certain fishing rights which they do not enjoy, and to secure which tedious litigation is now in progress. They understand that under the treaty they have the exclusive right to fish in the streams within and bordering upon the reservation, and believe that therein they may take fish in such manner, at such times, and by such means as best suit their purposes and convenience. Yet, by the operation of Territorial laws, they are confined to the use of traps and nets of specific dimensions, unadapted to the streams from which the fish are to be taken. In consequence they are deprived of their legitimate food supply. The regulation traps will take only the larger fish, such as are not found in the waters of the reservation, but only in the streams below where white men monopolize the business. The laws which thus operate to make the streams of the Indians mere spawning ground for the white man, they can see no justice in, and regard it as a violation of their treaty rights.

Stimulated by the Government providing a good saw-mill on the reservation and sawing without charge all logs delivered at the mill by the Indians, many of the more enterprising have fenced large tracts of land and erected houses, stables, etc., making for themselves good ranches. Several of these are extensive, embracing 1,000 to 2,000 acres. These improvements and the number of fenced tracts are increasing annually. Last year 1,500,000 feet of lumber was sawed and used in this way. There being no allotments of lands, the fencing is in extent and along lines determined by the fencer. In this way the most desirable tracts are being rapidly taken, and the range for stock of other Indians constantly decreasing in extent and value. This fact tends to a desire for allotment, and will help more than any abstract argument to bring the Indians to see the advantage of taking in severalty. Estimating the total number, men, women, and children, having rights on the reservation, and who might appear to claim under an allotment, to be 3,000, there would be 160 acres of arable land for each, and a surplus of 350,000 acres of stock range and pine lands, mostly mountain spurs.

Of the Indians at the Neah Bay Agency W. L. Powell, esq., writes:

I have under my charge two tribes of Indians, the Makahs and Quillehutes, located from Neah Bay around Cape Flattery and down the Pacific coast 35 miles to Lapurt, the point where the Quillehutes reside. The number of Makahs is 232 males and 252 females, making a total of 484. The Quillehutes number 125 males and 127 females, making a total of 252. The females predominate in each tribe. These Indians are decreasing slowly in number.

The Government has an industrial boarding-school at Neah Bay, where the children are taught the usual English branches, also blacksmithing, carpentry, and farming for the boys, while the girls are taught cooking, sewing, house-cleaning, etc. They are clothed and fed by the Government, for which I can not truly say they are thankful. The Quillehutes have a day school at Lapurt. These Indians are rapidly becoming civilized, being slowly compelled to give up their superstitious rites, etc.

These Indians, with the exception of hop-picking, make their living entirely from the water. They are expert at sealing, whaling, and all kinds of fishing. They are not an agricultural people, and I do not think they ever will become so.

EDUCATION.

The schools of Washington Territory have long been a source of pride to its citizens. Liberal provision has always been made for their support. The tax-levy for school purposes in 1889 was \$329,081.39. In

some of the eastern counties during recent years school lands have been leased by the county authorities. These leases were subsequently ratified by act of Congress. Considerable revenue has been derived from this source which is not included in the above. The larger towns are supplied with commodious school buildings constructed on approved modern plans. The future of the school system is most promising. The State of Washington is assured of a magnificent school fund. By the terms of the enabling act, title to sections 16 and 36 of each township within the Territory, heretofore reserved as school lands, is confirmed to the State, with a provision that they shall not be sold at less than \$10 per acre. These sections constitute one-eighteenth of the entire area of the State, or 2,488,675 acres, and deducting for Indian reservations and waste lands, there will still remain, in round numbers, 2,000,000 acres. This if sold at \$10 per acre will provide a fund of \$20,000,000. A large proportion of this land could not at present be sold for this figure. In many localities, however, sections can even now be sold at from \$20 to \$30 per acre. Spokane Falls and Tacoma has each within or adjacent to its city limits an entire section which is exceedingly valuable. In addition to the above, 5 per cent. of the proceeds of the sales of public lands lying within the State goes to the permanent school fund. For the maintenance of a scientific school there are appropriated 100,000 acres; for State, charitable, educational, penal, and reformatory institutions, 200,000 acres. The constitution recently ratified by the people protects the school fund thus provided for by declaring that the lands shall never be disposed of unless the full market value is secured therefor. The school fund is also made permanent and irreducible, and can be invested only in national, State, county, or municipal bonds.

The annexed table is condensed from the report of Hon. J. H. Morgan, superintendent of public instruction for the Territory.

Total amount raised for school purposes:	
1887	\$491,480
1888	505,885
1889	892,752
Amount paid for teachers' wages:	
1887	213,633
1888	239,588
1889	314,594
Amount paid for rent and repairs, 1889	21,123
Amount paid for school furniture, 1889	27,034
Amount paid for school-house sites, 1889	12,058
Amount paid for school buildings, 1889	233,808
Total amount for all purposes	655,642
Balance on hand	\$220,887
Estimated value of school-houses	\$1,094,462
Number of school-houses in the Territory	1,044
Number of school districts maintaining schools	1,066
Total number of districts	1,161
Average number of months taught	4 $\frac{3}{4}$
Number of graded schools in the Territory	49
Number of children enrolled:	
In 1887	32,172
In 1888	38,673
In 1889	46,751
Number of children of school age:	
In 1887	47,431
In 1888	59,833
In 1889	72,723
Number of children in private schools, 1889	2,529
Number of children under 5 years of age, 1889	26,448

Total number of children under 21 years of age .

1887	65,557
1888	83,008
1889	97,416
Number of male teachers employed, 1889	536
Number of female teachers employed, 1889	813
Average monthly salary :	
Males, 1889	\$47.66
Females, 1889	\$39.67

Mr. Morgan writes :

Much progress has been made in our schools during the past year. More money has been spent in building and repairing houses, providing apparatus and furniture, and paying teachers than ever before. More institutes have been held with better attendance, more graded schools have been established, more schools have been furnished with unabridged dictionaries, and teachers have obtained higher-grade certificates. It is with much gratification that I find the evidence that justifies me in reporting notable progress.

The following is a partial list of the private schools in the Territory: Whitman College, Walla Walla; Annie Wright Seminary, Tacoma; Washington College, Tacoma; Waitsburgh Academy, Waitsburgh; Olympia Collegiate Institute, Olympia; Northwest Normal School, Lynden; Spokane Business College, Spokane Falls; Empire Business College, Walla Walla; Cheney Academy, Cheney; Puget Sound Academy, Coupeville; Benj. F. Cheney Academy, Cheney; Spokane College, Spokane Falls; Colfax College, Colfax; St. Paul's School, Walla Walla; Tacoma Business College, Tacoma; Washington Seminary, Huntsville, and the Ellensburgh Academy, Ellensburgh. The sisters have schools at Spokane Falls, Sprague, Walla Walla, North Yakima, Olympia, Tacoma, Seattle, Pomeroy, and Vancouver.

TERRITORIAL UNIVERSITY.

The University of Washington was located in the city of Seattle and opened for students in 1862. It is finely situated on a campus of 10 acres in the heart of the city. The original grant of two townships made by Congress has been disposed of so that the institution is now dependent for support upon tuition fees and appropriations by the legislature. Heretofore these have been insufficient to keep the buildings and grounds in proper order and supply the various departments with all needed apparatus. But it is hoped the next assembly will make such provision for the university that it shall maintain a high standing among the institutions for learning in the new State.

The present board of regents consists of five members, who are actively interested in their charge. The faculty deserve much credit for their good work done under many difficulties. There are four courses of study open to students—the classical, scientific, normal, and business course. During the past year 217 students were in attendance.

FISHERIES.

Salmon continues to be the staple product of the fisheries. The pack for the year 1889, valued at \$1,332,500, was distributed as follows:

Canneries.	Cases.
Columbia River, Washington side	130,000
Shoalwater Bay	25,000
Gray's Harbor	30,000
Puget Sound	20,000
Total	205,000

The annual catch of this magnificent food fish appears to be diminishing in waters which have been fished for any considerable period. A hatchery has been established on the Clackamas, a branch of the Willamette, by the State of Oregon. Laws have also been enacted by that State limiting the fishing season, and otherwise protecting this industry. Corresponding laws will no doubt be passed by our State legislature, and an effort made to increase and perpetuate this large food supply of the Columbia and other Washington rivers.

HALIBUT.

Halibut in considerable quantities are taken off Cape Flattery in this Territory, and abound along the whole coast from that point to the Aleutian Islands. Several vessels are engaged in the trade. Better and cheaper transportation facilities will give to this industry indefinite expansion, there being, apparently, no limit to the number of fish that may be taken, or to the market therefor when cheap, rapid, and convenient transportation is provided. This fish is salted and dried, and shipped both in this form and fresh, packed in ice in refrigerator cars. An interesting article from the pen of Hon. James G. Swan, of Port Townsend, a well recognized authority on this subject, appears below:

The fish which constitute the most important product in a commercial point of view are the salmon, which are taken during the regular spawning seasons and are canned and also salted in barrels and smoked, and the halibut, cod, and other deep-sea fish, which are taken in limited quantities in Fuca Strait at certain seasons, and in great quantities in the waters of the Pacific Ocean and Behring Sea from Cape Flattery to the Arctic Ocean.

Inasmuch as statistics concerning the salmon pack can be obtained with accuracy from the canneries, I will confine my remarks to the salt water products of the Strait of Fuca and the North Pacific Ocean.

On the 20th of October, 1880, I submitted to Prof. Spencer F. Baird, at that time U. S. Fish Commissioner, reports of the halibut and other food fish products of Puget Sound, particularly at Cape Flattery. At that time there were no organized fisheries by white people, the principal amount of halibut being taken by the Makah Indians of Cape Flattery, whose principal village and the agency of the reservation is at Neah Bay, where I was stationed at that time as an inspector of customs. The total number of Indians does not vary much at the present time from the number then residing on the reservation, and I will quote from that report as follows:

"Of the amount of halibut taken by the Indians of Cape Flattery, I can arrive at only a very rough estimate. I tried at the commencement of the season to keep an account of each day's catch, but when the Indians removed to their summer residences it was simply impossible, without incurring an expense for transportation and time which I did not feel justified in assuming. In conversation with several of the most intelligent of the chiefs, they informed me that each family lays in from three hundred to five hundred halibut of the sizes brought from the banks. These halibut when fresh will average 35 pounds each, but when dried they lose at least 75 per cent. of their weight. There were, at that time, one hundred and fifty-four heads of families in the Makah tribe, and taking the smallest estimate of three hundred halibut of 35 pounds each to every family, is 10,300 pounds of fresh halibut, or 2,575 pounds of dry halibut, a total for the whole tribe of 1,586,200 pounds fresh halibut, or 396,555 pounds dry fish, for the annual production, the greater portion of which is used by the tribe for food, although a large amount is yearly sold or traded to other Indians."

The halibut are taken in the largest numbers on banks which lie northwest from Cape Flattery, 15 miles distant, and they are most numerous during the summer months, at which time the Indians procure and dry enough for their winter supply, although fish can be taken by them every day in the year when the weather is suitable for canoes to go out on the strait or ocean. Later in the season and during the winter months halibut are taken up the Strait of Fuca and in the channels between the islands of the San Juan Archipelago. These are of much larger size, and average from 75 to 100 pounds. The largest specimen I have seen was taken in Port Townsend Bay and weighed 250 pounds; but these very large ones are not common, nor are they as nice eating as the small sizes, which are termed by Gloucester fishermen "chicken halibut."

Several of the Gloucester fishermen have come out here to engage in developing the fisheries of the North Pacific Ocean, and find no difficulty in procuring cargoes on the banks along the Alaskan coast, but the excessive rates for transportation charged by the transcontinental railroads have prevented a rapid growth of this industry. It has been announced by the Union Pacific Railroad Company that when their arrangements are completed they intend to run refrigerator-cars direct to Port Townsend, and will take fresh fish in ice through on the long haul at such greatly reduced rates that the fishermen can get their products to eastern markets and sell them at remunerative rates. As soon as this arrangement can be effected other industries will be brought to Puget Sound, particularly the whaling business, as the oil and bone which are now all taken to San Francisco to be forwarded to eastern markets can find a rapid transit by the Union Pacific or Northern Pacific roads to New York, Boston, or London, and save 600 miles of water carriage between the Strait of Fuca and San Francisco.

The cod fishery, which is now all done by San Francisco parties, and the entire catch transported there and cured, will eventually center on Puget Sound as naturally as the cod fishery of the Atlantic centers at Gloucester. It is an admitted fact that the sooner fish can be cured after they are caught the better the product, and fish caught in northern waters should be cured in northern latitudes. The cod fish of Newfoundland and Nova Scotia, when cured at those places, are far superior to what they would be if transported in bulk to Norfolk to be cured and dried; and the cod of the Shumagin Islands could be better cured on Puget Sound than San Francisco Bay.

At the last session of the legislature of Washington Territory a bill was introduced to create a fish commission, to be composed of three commissioners, one of whom should reside in the interior and have special charge of the propagation of fish, one to reside at Astoria to look after the salmon interests of the Lower Columbia, and the third to reside on Puget Sound to look after the deep-sea fisheries. These commissioners were required to make annual statistical reports to the secretary of the Territory, who was directed to make annual reports to the governor for transmission to the legislature. The bill failed to become a law, which is to be regretted, as we now see the importance of such a commission, and particularly at the present time, when such reports would be of great value to the Eleventh Census of the United States, to be taken in 1890. It is to be hoped that the legislature of our new State will appreciate the importance of fostering and encouraging our fisheries, and by wise enactments provide for the development of this valuable industry.

Besides the halibut, cod, and salmon, there are other valuable food fishes whose excellence is beginning to be appreciated. One of these, the *Ophiodon elongatus*, or cultas cod as it is called at Cape Flattery, and in San Francisco is known as Green or Buffalo cod, resembling the true cod in its outward marking, but different in the fins and other particulars. This fish, which attains a weight of from 20 to 30 pounds, is nutritious and palatable, and is found in considerable quantities around Cape Flattery and in Fuca Strait. During the present year Capt. Charles Johnstone, of the Gloucester Fish Company, at Port Townsend, has salted and dried a lot of this fish, which sells readily and gives good satisfaction. Captain Johnstone thinks that when the excellence of this fish is better known the demand for it will steadily increase.

The best and most delicious of all the ocean fish taken in Puget Sound is the black cod, *Anaplopoma fimbria*. At present this fish is taken only in limited quantities, as it is found in very deep water. The largest are taken in 80 fathoms in Fuca Strait, but around Queen Charlotte Islands, British Columbia, where they abound, they are caught in 210 fathoms depth. The skilled fishermen from Newfoundland have no difficulty in fishing at that depth, but the fishermen of Puget Sound, who find other fish plenty at 50 fathoms and under, do not care to fish in the profound depth of 200 fathoms. Those who have tasted of this fish pronounce it superior to all others. The black cod averages 16 pounds. Some have been taken which weighed 40 pounds, but this size is not common. The outside of this fish is dark sepia brown, approaching black on the upper portion, and grayish belly. The flesh is white and very fat; not the oily fat of the mackerel, salmon, or herring, but a product like soft lard, which, when fresh, is very palatable. The fat permeates every part of the tissue, and imparts a delicious flavor to the fish which is much prized by epicures. These fish are called "skid" by the Indians of Queen Charlotte Islands, and "beshow" by the Makah Indians of Cape Flattery. Each tribe or band along the coast has a local name for these fish. They were first called black cod by the white men at Neah Bay. But this fish does not belong to the *Gadus*, or true cod family, nor is it likely any eastern fish. It somewhat resembles the pollock of Europe, and was named by Dr. Bean *Pollachius Chalcogrammus*, or Alaska pollock. Professor Jordan, however, discovered that it was neither a pollock nor a true cod, and he gave it its present scientific name, *Anaplopoma fimbria*.

A fishery has been established at Queen Charlotte Islands, British Columbia, by Victoria parties, and the product of their catch finds ready sale. When we have the railroad facilities for transporting our fresh fish in refrigerator-cars direct to East-

ern markets it will not be long until our own fishermen will find some means of securing the black cod, which are found in all the deep waters of Fuca Strait, Admiralty Inlet, and Hood's Canal. Occasionally they are taken in all these places, but no regular, systematic fishery has as yet been established for the capture of this delicious fish, which, either fresh, salted, or smoked, is most palatable and nutritious food.

Besides the larger varieties which I have mentioned there are some fourteen varieties of *Sebastichthys*, which, under the various names of rock cod, red fish, grouper, bass, perch, etc., are taken in great quantities at Cape Flattery and in Fuca Strait and other portions of Puget Sound. To these may be added flounders of several varieties, kelp fish, smelt, herring, eulachon, a candle fish, and other kind, which, although excellent food fish, are not taken in sufficient quantities to be considered of much commercial value. Among these may be named the eastern shad, which was introduced into the California waters by the U. S. Fish Commission several years ago, and are now beginning to be taken in limited numbers with the spring run of salmon in the Columbia River and in the schools of herring on Puget Sound. As population increases, making a home demand for fish food, and when means of cheap and speedy transportation to distant markets is furnished, our fisheries will steadily develop, and prove eventually to be one of the most important and profitable industries of the new State of Washington.

BANKS.

There are in the Territory twenty-six national and forty-two private banks.

National Banks of the Territory.

Name.	Capital.	Name.	Capital.
First National Bank of Colfax.....	\$100,000	Spokane National Bank of Spokane Falls.....	\$60,000
Second National Bank of Colfax.....	60,000	Traders' National Bank of Spokane Falls.....	75,000
Columbia National Bank of Dayton...	60,000	First National Bank of Sprague.....	50,000
Ellensburg National Bank of Ellensburg.....	50,000	Citizens' National Bank of Tacoma...	100,000
First National Bank of North Yakima.	65,000	Merchants' National Bank of Tacoma.	100,000
Yakima National Bank of North Yakima.....	65,000	National Bank of Commerce of Tacoma.	200,000
First National Bank of Olympia.....	75,000	Pacific National Bank of Tacoma.....	100,000
First National Bank of Pomeroy.....	50,000	Tacoma National Bank of Tacoma....	100,000
First National Bank of Port Townsend.	50,000	First National Bank of Vancouver....	50,000
National Bank of Oakesdale.....	50,000	Baker-Boyer National Bank of Walla Walla.....	150,000
First National Bank of Seattle.....	150,000	First National Bank of Walla Walla...	100,000
Merchants' National Bank of Seattle..	100,000		
Puget Sound National Bank of Seattle.	50,000		
First National Bank of Snohomish....	40,000	Total capital.....	2,120,000
First National Bank of Spokane Falls.	70,000		

Territorial and private banks.

Name.	Capital.	Loans.	Deposits.
Ben E. Snipes & Co., of Ellensburg.....	\$100,000	\$202,470	\$156,413
Chehalis Bank, N. B. Coffman estate.....		90,000	100,000
Bank of Colfax.....		100,000	80,000
Bank of Farmington.....	50,000	106,850	61,413
Skagit County Bank, of La Conner.....	50,000		
Skagit River of Mount Vernon.....	25,000	18,449	
Harford & Sons, of Pataha City.....		30,000	
Merchants' Bank, of Port Townsend.....	75,000	188,253	176,187
Bank of Pullman.....	25,000	48,947	28,725
Bank of Commerce of Seattle.....	100,000		
Dexter, Horton & Co., of Seattle.....	200,000	1,202,100	1,987,357
Guarantee Loan and Trust Company of Seattle.....	50,000	128,021	112,112
Seattle Safe Deposit and Trust Company, Seattle.....	100,000		
Washington Savings Bank of Seattle.....	50,000	65,276	37,179
Bank of Spokane Falls.....	75,000		
Oakland Land, Loan, and Trust Company, Tacoma.....	182,200	173,849	27,271
Security Bank of Tacoma.....	60,000		
Tacoma Building and Savings Association, Tacoma.....	75,000	54,318	10,120
Tacoma Trust and Savings Bank, Tacoma.....	30,000	48,868	43,630
West Coast Fire and Marine Bank, Tacoma.....	180,000	182,009	73,385
Traders' Bank of Tacoma.....	100,000	289,970	355,595
Farmers' Savings-Bank of Walla Walla.....	100,000		
Walla Walla Savings-Bank Walla Walla.....	125,000		
Washington Loan and Trust Company, Walla Walla.....	200,000		
Commercial Bank of Vancouver.....	30,000	61,273	48,923

List of banking institutions of which no statistics have been obtained.

Bank of Aberdeen.
 Rodman & Eshelman, of Goldendale.
 C. N. Byles Company, of Montesano.
 Bank of Palouse City.
 Clapp & Fauerbach, of Port Townsend.
 G. E. Miller & Co., of Seattle.
 Spokane Loan, Trust, and Savings-Bank.
 Tacoma Building and Savings Association.

Bank of Waitsburgh.
 Stewart & Masterson, of Puyallup.
 Crandall Bros., of Pomeroy.
 Stearns Syndicate Bank, of La Camas.
 Bank of Centralia.
 H. H. Dearborn & Co., of Seattle.
 Bank of North Seattle.
 Traders' Bank of Tacoma.
 First Bank of Whatcom.

Meteorological data.

[Report of Edgar McGovern, signal observer for the U. S. Signal Station at Olympia.]

Year.	Mean height of barometer.	Highest barom- eter.	Lowest barom- eter.	Annual range of barometer.	Mean annual temperature.	Highest temper- ature.	Lowest temper- ature.	Annual range of temperature.	Mean tempera- ture for spring.	Mean tempera- ture for summer.	Mean tempera- ture for winter.	Rain-fall and melted snow, total amount.	Rain-fall for spring.	Rain-fall for sum- mer.	Rain-fall and melted snow for winter.
	In.	In.	In.	In.	°	°	°	°	°	°	°	In.	In.	In.	In.
1878	29.93	30.63	29.07	1.56	50.8	95.0	22.0	73.0	50.6	61.6	41.8	64.33	10.47	1.54	32.05
1879	29.96	30.69	29.17	1.52	49.1	88.5	8.0	80.5	48.8	60.3	38.2	73.44	21.26	5.17	32.97
1880	30.00	30.79	29.12	1.67	47.7	93.5	11.0	82.5	45.5	59.4	38.0	62.79	12.14	2.20	41.51
1881	29.98	30.59	29.15	1.44	49.4	87.0	23.0	64.0	49.7	57.6	38.7	65.50	10.50	3.62	34.04
1882	30.00	30.53	29.17	1.36	48.9	91.5	13.5	78.0	46.9	61.0	39.1	51.59	9.11	2.48	26.03
1883	30.04	30.71	29.27	1.44	49.0	90.0	8.0	82.0	48.7	60.7	36.4	41.61	16.32	0.22	14.00
1884	29.98	30.56	29.17	1.39	49.4	92.0	2.0	90.0	49.8	61.8	36.3	35.58	6.63	4.76	15.45
1885	29.98	30.54	29.06	1.48	50.8	97.0	23.0	74.0	50.5	62.3	39.3	41.95	3.43	1.89	25.37
1886	30.00	30.70	29.16	1.54	50.2	92.0	15.0	77.0	48.1	62.2	42.5	48.13	10.01	2.83	24.94
1887	30.01	30.63	29.26	1.37	49.2	93.0	2.0	91.0	49.0	60.0	38.0	61.78	20.20	1.93	29.86
1888	29.99	30.71	29.33	1.38	50.9	92.0	-2.0	94.0	50.0	61.7	41.3	45.54	7.89	6.46	10.56
1889 to Sept. 1 .....	.....	30.54	29.22	1.32	.....	90.0	20.0	70.0	52.3	61.9	.....	17.00	8.22	3.33	.....

Year.	Wind, mean di- rection.	Highest hourly velocity of wind.	Total number of miles wind traveled.	Number of cloud- less days.	Number of part- ly cloudy days.	Number of cloudy days.	Number of days on which .01 inch or more of rain or snow fell.	Number of days temperature rose above 90°.	Number of days temperature fell below 32°.	Mean relative humidity.	Remarks.
		Miles.	Miles.							Per ct.	
1878	S.	27	34,890	46	120	199	162	1	19	78	First frost Oct. 15.
1879	S.	36	40,243	60	94	211	197	0	40	80	First frost Oct. 27; last frost June 16.
1880	S.	32	39,457	54	127	185	159	1	60	80	First frost Sept. 8; last frost June 15
1881	S.	29	38,668	43	138	178	182	0	18	80	First frost Oct. 3; last frost May 22.
1882	S.	48	37,756	53	149	159	183	2	37	77	First frost Nov. 8; last frost May 20.
1883	S.	28	20,872	99	125	140	134	0	36	77	First frost Nov. 18; last frost April 24.
1884	N.	42	17,880	87	139	140	146	2	65	79	First frost ———; last frost May 28.
1885	S.	31	23,139	104	128	133	134	4	16	82	First frost Oct. 10; first snow Nov. 30.
1886	S.	23	35,458	99	128	138	166	1	46	83	First frost Sept. 27; first snow Dec. 26.
1887	S.	26	33,794	90	134	141	165	1	57	83	First frost Oct. 24; last frost May 11.
1888	S.	30	30,935	103	98	165	156	1	44	80	First frost Nov. 14; last frost May 5.
1889 to Sept. 1	S.	22	.....	100	56	79	79	0	18	.....	

Meteorological summary of Walla Walla, Wash., for the years 1886, 1887, and 1888.

[Latitude, 40° 2'; longitude, 118° 20'; altitude, 1,018 feet above sea level; magnetic variation, 21° east.
H. S. Blandford, sergeant, Signal Corps.]

Year.	Annual mean.	Highest observed.	Date.	Lowest observed.	Date.	Absolute range.	Temperature.						
							Annual mean.	Maximum.	Date.	Minimum.	Date.	Absolute range.	Mean maximum.
1886...	28.95	29.63	Jan. 7	28.35	Jan. 20	1.28	53	104	July 16	— 5	Jan. 20	109	65
1887...	28.94	29.57	Dec. 20	28.22	Jan. 20	1.35	53	99	May 30	— 3	Feb. 7	102	63
1888...	28.94	29.72	Jan. 14	28.44	Jan. 2	1.28	54	102	July 18 Aug. 21	— 17	Jan. 16	119	64

Year.	Mean dew point.	Mean relative humidity.	Mean cloudiness.	Precipitation. Total amount.	Total movement of wind.	Maximum hourly velocity of wind during month.			Prevailing direction.	Number of days.							
						Miles.	Direction from—	Date.		Cloudless.	Partly cloudy.	Cloudy.	.01 inch or more precipitation fell.	Maximum temperature below 32°.	Minimum temperature below 32°.	Maximum temperature above 90°.	Thunder-storms.
1886....	35	57	4.4	16.20	55,330	36	SW.	Sept. 25	SW.	142	148	75	101	16	62	39	5
1887....	36	59	4.9	20.44	56,701	45	SW.	Mar. 11	SW.	129	124	112	115	19	68	27	5
1888....	35	56	4.6	13.59	52,117	45	SW.	Apr. 4	SW.	137	115	114	86	29	67	35	3

Signal station at Port Angeles.

[Mean monthly and mean annual temperature. T. J. Patterson, observer, Signal Corps.]

Months.	1885-'86.	1886-'87.	1887-'88.	1888-'89.	Mean for each month.	Remarks on temperature.
July.....	58.1	56.9	54.3	55.8	56.3	Highest 1885 was 82°, July 55.
August....	55.4	55.8	55.1	57.3	55.9	Lowest 1885 was 14°, Dec. 31.
September.	52.9	52.1	51.1	55.7	52.9	Highest 1886 was 88°, July 18.
October....	47.2	45.0	46.0	49.0	46.8	Lowest 1886 was 7°, Jan. 18.
November.	42.9	39.5	41.5	40.2	40.8	Highest 1887 was 82°, Aug. 11.
December.	40.2	40.8	39.3	39.0	39.8	Lowest 1887 was 3°, Feb. 5.
January...	33.2	38.5	31.7	35.6	34.8	Highest 1888 was 79°, Aug. 3.
February...	40.3	28.9	40.5	39.6	37.3	Lowest 1888 was 6°, Jan. 14.
March.....	39.7	40.7	40.7	44.6	41.4	Highest 1889 was 83°, July 8.
April.....	44.2	43.4	46.1	47.1	45.2	Lowest 1889 was 26° Jan. 14.
May.....	49.0	49.6	50.7	51.2	50.1	
June.....	53.8	52.2	55.4	53.6	53.8	
Mean ..	46.4	45.3	46.0	47.4	46.3	

NOTES.—The range of temperature for five years is 85°. The greatest range in any one year is 81° in 1886. The mean daily range for five years is 15°, showing a condition of climate that for health and comfort is not surpassed. The weather is neither extremely hot nor cold. The days are extremely pleasant and enervating and the nights are cool; so cool, in fact, that flies, mosquitoes, and other troublesome insects are unknown.

Signal Station at Fort Angeles—Continued.

Month.	Average number cloudless days for each month in the year.	Average number partly cloudy days for each month in the year.	Average number cloudy days for each month in the year.	Average number days with rain-fall for each month in the year.	Prevailing wind direction for each month in the year.
July	13	12	6	5	W.
August	11	11	9	11	W.
September	8	15	7	8	W.
October	9	18	4	8	W.
November	2	14	14	17	S.
December	2	15	14	22	N.
January	5	12	14	22	S.
February	2	12	14	13	S.
March	6	11	14	15	W.
April	2	16	12	13	W.
May	12	12	7	8	W.
June	9	14	7	8	W.

NOTES.—The maximum velocity of wind at this station in five years was 35 miles per hour from the northeast on January 14, 1886. The average daily movement of wind is 113 miles and the average hourly movement is 4.5 miles. High winds do not frequently occur, and when they do Port Angeles is well sheltered from each direction. October and February are among the most pleasant months in the year here, the days being warm and balmy and the nights cool, and when cold waves come they are quickly superseded by the warm "chinook."

Table showing rain-fall for each month, the mean rain-fall for each month, and the total annual rain-fall.

Month.	1885-'86.	1886-'87.	1887-'88.	1888-'89.	Mean for each month.
July	.03	.46	.56	1.11	.54
August	.00	.88	.14	0.53	.39
September	3.25	1.68	1.15	.72	1.45
October	2.44	1.88	2.89	4.31	2.88
November	3.90	1.46	4.52	3.77	3.41
December	3.07	7.71	6.07	3.44	5.07
January	5.54	6.20	5.43	2.96	5.03
February	2.98	4.68	1.58	.99	2.56
March	3.23	3.65	2.89	2.43	3.05
April	2.67	1.16	1.56	2.49	1.97
May	.77	2.11	.21	1.53	1.16
June	.70	1.12	2.62	.94	1.34
Mean	28.58	32.99	29.62	25.22	28.85

NOTES.—Snow is of rare occurrence and generally melts almost as rapidly as it falls. Thunder-storms seldom occur; occasionally one may be seen passing in the distance along the top of the Olympic Mountains, when the effect is grand beyond description. A destructive hail-storm has never been known here. The rain-fall is just sufficient to insure good crops. A failure of crops or a drought is unknown.

Meteorological data of Spokane Falls from 1882 to 1888, inclusive.

[Compiled by Charles Stewart, sergeant, Signal Corps.]

Date.	Mean height of barometer.*	Highest barom- eter.*	Lowest barome- ter.*	Range of barom- eter.*	Mean annual temperature.	Highest temper- ature.†	Lowest temper- ature.‡	Annual range of temperature.	Rain-fall and melted snow.	Wind.		
										Prevailing direction.	Highest hourly ve- locity.	Total num- ber of miles traveled.
	In.	In.	In.	In.	°	°	°	°	In.		Miles.	
1882...	30.05	30.65	29.48	1.17	46.5	101.5	17.0	118.05	25.99	SW.	44	49.098
1883...	30.08	30.81	29.46	1.35	46.8	96.7	27.7	124.4	14.37	SW.	37	37.086
1884...	30.02	30.76	29.94	1.52	45.5	57.5	17.8	115.3	20.56	SW.	29	30.684
1885...	30.06	30.65	29.52	1.13	50.1	99.3	14.0	113.3	19.01	SW.	33	40.064
1886...	30.03	30.73	29.41	1.33	48.7	100.3	10.5	110.8	15.86	W.	42	40.553
1887...	30.01	30.73	29.17	1.56	47.2	97.3	11.0	108.3	20.10	SW.	31	34.490
1888...	30.02	30.96	29.46	1.50	48.7	101.8	30.5	132.3	17.69	SW.	30	37.945
Mean	30.04	.....	.....	1.36	47.6	.....	.....	117.6	19.08	SW.	.....	.....

Date.	Number of clear days.	Number of fair days.	Number of cloudy days.	Number of days 0.1 inch or more rain or snow fell.	Number of days temperature rose above 90 degrees.	Number of days temperature fell below 32 degrees.	Mean relative humidity.	Remarks on frost.
							Feet.	
1882.....	92	132	141	141	17	121	68.6	First, Sept. 30; last, May 20.
1883.....	181	126	58	94	14	136	67.1	First, Oct. 3; last, April 5.
1884.....	113	151	97	123	10	128	69.4	First, Sept. 7; last, May 13.
1885.....	141	137	87	116	15	84	75.5	First, Oct. 5; last, April 25.
1886.....	176	114	75	104	14	113	70.6	First, Sept. 28; last, April 5.
1887.....	105	153	107	126	15	137	73.2	First, Sept. 20; last, June 4.
1888.....	98	111	157	106	28	115	68.4	First, Sept. 23; last, May 21.
Mean	.....	.....	.....	115.7	16.1	119.1	70.4	

* Barometer reduced to sea-level.

† Highest temperature, 101.8 degrees, August 22, 1888.

‡ Lowest temperature, 30.5 degrees (below zero), January 16, 1888.

PUBLIC BUILDINGS.

Aside from the penitentiary at Walla Walla and the hospital for the insane at Steilacoom, Washington has no imposing public buildings. The capitol at Olympia is a plain wooden structure. The act providing for the admission of Washington as a State makes an appropriation of 32,000 acres of land for the erection of public buildings at the capital of the State. When the capital shall have been finally located it is expected that with the assistance thus afforded suitable and creditable buildings will be erected. Some of the more prosperous counties have handsome and commodious court-houses, notably those at Ellenburgh, Dayton, and Walla Walla.

HOSPITAL FOR THE INSANE AT MEDICAL LAKE.

The last legislative assembly appropriated \$60,000 for the erection of a hospital for insane at Medical Lake in eastern Washington. Work is now well advanced on this building, which will probably be fully inclosed by November. The edifice is of brick, commodious and well arranged, to be similar in all but exterior decorations to the asylum at Steilacoom.

HOSPITAL FOR INSANE AT STEILACOOM.

A brief history of this institution, with account of its present condition, has been furnished by John W. Waughop, M. D., superintendent of the asylum, and is appended in full:

This hospital owns 630.86 acres, most of which was formerly used as a military garrison, but after being abandoned by the United States Government was secured by the Territory for its present use, and was established as a hospital August 19, 1871. Since that time all the insane of the Territory have been sent here. Until 1887 the old buildings of the garrison were used for the hospital, but in that year a fine brick hospital building, with all the modern improvements, was finished and occupied. Its capacity is 240; cost, \$100,000. There are at present in the hospital 303 patients—225 males and 78 females; 203 are from western Washington and 100 from eastern Washington. The new building not being of sufficient capacity to hold all these patients, three of the old wooden buildings are still occupied.

The following is a list of patients admitted from different counties during the past two years:

Counties.	Male.	Female.	Total.	Counties.	Male.	Female.	Total.
Adams		1	1	Okanogan	1		1
Asotin	2		2	Pacific	1	1	2
Chehalis	2		2	Pierce	46	16	62
Clallam	3		3	Penitentiary	3		3
Clark	6	3	9	San Juan	1		
Columbia	2	2	4	Skagit	2	1	3
Cowlitz	8	3	11	Skamania	1		
Franklin	1	1	2	Snohomish	6	2	8
Garfield	5		5	Spokane	22	15	37
Island	1		1	Thurston	11	8	19
Jefferson	13	4	17	Wahkiakum	1		1
King	56	9	65	Walla Walla	19	9	28
Kitsap	5		5	Whatcom	5		5
Kittitas	15	2	17	Whitman	11	3	14
Klickitat	6	2	8	Yakima	2		2
Lewis	3	1	4				
Lincoln	2	2	4				
Mason	4		4				
				Total	266	85	351

The hospital was opened in 1871 with 21 patients, who were removed from Monticello, Cowlitz County, where they were for a time kept. Since the establishment of the hospital 1,100 patients have been admitted. The hospital is free to all the insane of the Territory, to rich and poor alike. The counties bear the cost of commitment and return, if indigent, when discharged, and the Territory bears the expense of taking them to the hospital and caring for them while there.

The hospital is under the general management of three trustees, who are appointed by the governor and confirmed by the legislative council. The immediate control of the hospital is under the superintendent, a physician, appointed by the trustees.

The management of this institution is enlightened and humane, and compares favorably with that of any other such establishment in the country.

TERRITORIAL PENITENTIARY.

The Territorial penitentiary, completed at Walla Walla in 1887, has been improved during the past year by the completion of a new cell wing, officers and guards' quarters, new brick barn, workshops, and the erection of buildings for the electric light and steam-heating plant. Electric lights and steam heat have been introduced, and various improvements made upon the farm and brick-yard, a new steam brick-making plant having been added to the latter.

The board of commissioners report the number of convicts at present confined in the penitentiary to be 172. Since October 1, 1888, there have been received 126; 50 have been discharged by commutation of sentence, 9 have been pardoned, 3 sent to the asylum, 2 have died, and

2 escaped. The number of prisoners reported in 1887 was 103, an increase of 69 in two years. Prisoners are employed chiefly in brick-making.

SCHOOL FOR DEFECTIVE YOUTH.

This school, situated at Vancouver, has, during the past year, been provided with a new, handsome, and commodious building, overlooking the Columbia River:

Number of pupils in attendance last term.....	26
Number of male pupils	15
Number of female pupils.....	11
Number of deaf-mutes	25
Number of blind	1
Whole number of officers.....	3
Amount of salary paid to officers	\$2,300
Amount of expenditures last term	\$5,000
Valuation of property.....	\$35,000
Whole number of pupils at beginning of present year	36
Increase of pupils over last term	10

TERRITORIAL LIBRARY.

The library of Washington Territory, consisting of law-books, Government documents, and miscellaneous works, occupies two large, well-lighted rooms of the capitol building. There have been 529 additions during the past year, making a total of 10,313 volumes. The library is increased chiefly through a system of exchange with other States and Territories.

NATIONAL GUARD.

The following article on the national guard of Washington was prepared by Adjutant-General R. G. O'Brien:

The organized militia of this Territory, designated by law as the National Guard of Washington, is composed of two regiments of infantry of six companies each, and one troop of cavalry; in all, 845 officers and men. The general staff numbers 25; making an effective force of 870 officers and men ready for duty.

These regiments are located, one in western Washington and the other, with the troop of cavalry, in eastern Washington. They are made up of the best class of our citizens, and are active and earnest in the performance of the duties that pertain to the military branch of the Government.

The history of the past two years in this Territory has demonstrated the usefulness of this arm of the government as an extraordinary police to assist the civil authorities in maintaining the laws, protecting the lives and property of our citizens, and suppressing mob violence when the civil power has failed.

The services rendered by the National Guard of this Territory in suppressing the riots at the Newcastle mines in King County, in the preservation of life and property by maintaining order at the cities of Seattle and Spokane Falls on the occasions of the disastrous conflagrations at those places during the past summer, have proved beyond question that the small cost of maintaining a well-organized militia is as nothing compared to the great saving in property alone through its intervention.

The value of property saved and protected from destruction in Seattle alone will exceed more than a hundred-fold the entire cost of equipping and maintaining double our present force for the past two years.

The assessors' returns, made under the law to the adjutant-general, show the number of persons between the ages of eighteen and forty-five years, subject to military duty, to be about 55,000, from which a very effective force could be organized in an emergency at short notice.

The needs of the force continue to increase as it progresses toward perfection in the line of duty assigned it, and, though small in number, Washington Territory can boast of a National Guard which experience has proved to be second to none in the nation.

LEGISLATION.

The legislation of a national character that the people of Washington especially desire is:

First. Liberal appropriations for continuing actively the work on the canal at the Cascades of the Columbia River and the construction of a boat railway over the portage at The Dalles. The opening of this main artery of our internal commerce has long been needed and demanded by the people inhabiting the great Columbia Valley. The construction of this canal and boat railway, it is believed, will solve the problem of cheap transportation, rendering grain-raising a profitable industry in many localities where otherwise it can never be made so. Appropriations are also imperatively needed for the Upper Columbia and the Snake to make of them steam-boat rivers. Large areas not now habitable will, with navigation of these streams, immediately become populated. There is no more appropriate subject for legislation than the improvement of rivers where such conditions exist.

Second. The improvement of Gray's Harbor. With a moderate expenditure of money this harbor can be made accessible for vessels of the largest class. The Chehalis Basin, which is immediately tributary to Gray's Harbor and dependent upon it for an outlet, has an area of 2,400 square miles. It is for the most part densely timbered. Vast quantities of lumber are annually shipped on coasting vessels. A railroad from the Centralia coal-fields will shortly be constructed and the delivery of coal at this harbor will emphasize the need of deepening the channel.

Third. The allotment of lands in severalty to all the Indians on reservations. It is believed this will not only be conducive to the welfare of the Indians, but will subserve the public good by throwing open much valuable land to settlement.

Fourth. Another matter of great public importance, and of deep solicitude to our people, is the establishing of a naval station at some point on Puget Sound. Whether the site at Port Orchard, selected by the commissioners appointed for that purpose, is the most advantageous is still an unsettled question in the minds of many enlightened citizens. The final location of the site should be determined only after the most painstaking investigation. It is urged with some apparent force that the rendezvous for vessels intended to defend the entrance to the Straits of Fuca should be in proximity to the straits.

The expanding commerce of Washington, its coasting trade even now being second in the country, surpassed only by New York; the growth of Puget Sound cities, their proximity to the Pacific Ocean, their present absolutely defenseless condition, all distinctly indicate the importance of the immediate establishment of this station, and thoroughly emphasize the necessity for some means of defending the entrance to this inland sea.

Fifth. Only about one-half the lands of the Territory have yet been surveyed. Rates allowed for surveys by the General Government are notoriously inadequate. With the rapid influx of population we are now experiencing there is imperative demand for immediate additional surveys. Attention has been repeatedly called to the necessity for this. It is earnestly hoped the subject will soon receive the consideration its importance demands.

Sixth. The growth of several of our principal towns entitle them to Federal buildings. Better post-office facilities are imperatively required.

At Spokane Falls and Seattle there has been well-grounded complaint of inefficient service resulting from insufficient appropriations.

Seventh. The chief and most prolific sources of friction between the people and the Northern Pacific Railroad Company is the failure on the part of the National Government to make a final adjustment of the limits of the land grant to that company. The lands granted in aid of construction of the Columbia River line of their system should be immediately restored to the public domain and thrown open to settlement, the company having apparently long since abandoned any intention of constructing it. In Walla Walla County 55,000 acres of land lie in disputed limits. These lands were purchased by settlers from the railroad company, and in many instances paid for. By a subsequent ruling of the Commissioner of the General Land Office they were held to be outside the grant to that company. Eight years have elapsed since these rulings disturbed the titles to these lands, and although repeated efforts have been made by the sufferers to secure an adjustment no action has been taken. Meanwhile improvement is retarded, a feeling of insecurity prevails, and there is constant irritation and apprehension concerning their ultimate disposition. In Whitman and some other counties there is conflict between lien land settlers and the railroad company, which should also be avoided by appropriate legislation.

Eighth. Washington, like the other Pacific States, is awaiting with solicitude the completion of the Nicaragua Canal. Her sea-ports are, by the Cape Horn route, distant from Liverpool 15,000 miles. This immense distance precludes the possibility of profit in the shipment of our forest products, closing the markets of Europe as well as those of the Atlantic coast of our own country against it. Washington ships annually to the United Kingdom and to ports of Continental Europe 250,000 to 300,000 tons of wheat, or, say, 150 cargoes. If shipped via the proposed canal a saving in distance of 8,000 miles, or more than half the entire distance, would be effected. The length of time required for a voyage of a sailing vessel would be reduced from five months to eight weeks, while a moderately fast steamer will make the voyage in three weeks. The saving in cost of shipment of wheat cargoes, which by reason of the reduction in distance, in time and in insurance, would not be less than 40 per cent. An average rate for charters, for grain cargoes, from Puget Sound to Liverpool under present conditions is not less than 35 shillings per ton. A 40 per cent. reduction on this rate would add to the profits of the grain producer in Washington alone, at present rate of production, not less than \$1,000,000 annually, while the stimulus afforded by better prices would immediately bring all arable land into cultivation. No further argument is required to show the advantages to result to Washington from the completion of this canal. It is a matter of such transcendent national importance that it is an appropriate subject for national legislation and assistance.

APPENDIX.

Biennial report of Territorial treasurer, from October 1, 1887, to October 1, 1889.

GENERAL SUMMARY.

General fund :	
Balance on hand October 1, 1887.....	\$3, 973. 29
Received :	
From counties	284, 439. 48
From sale of codes and laws.....	1, 086. 90
From one-third gross earnings tax.....	19, 410. 62
From penitentiary, sale of brick.....	4, 538. 30
From 10 per cent. liquor license tax	19, 870. 49
From military fund on account.....	12, 787. 74
From coal-mining fund, to balance	950. 30
From penitentiary fund, to balance	240. 32
From post-office stamps returned by council	5. 00
	347, 302. 44
By total amount warrants paid October 1, 1887, to September 30, 1889, principal	\$347, 061. 85
By total amount interest paid on same.....	19, 024. 48
Balance on hand October 1, 1889.....	1, 216. 11
	347, 302. 44
Penitentiary fund :	
To balance on hand October 1, 1887.....	59. 17
Received from counties.....	781. 15
	840. 32
By paid warrants	600. 00
By carried to general fund to balance.....	240. 32
	840. 32
Liquor-license fund :	
To received from towns, cities, and counties.....	19, 870. 49
By carried to general fund to balance.....	19, 870. 49
Coal-mining tax fund :	
To balance on hand October 1, 1887.....	303. 35
To received from coal companies	696. 95
	1, 000. 30
By total amount warrants paid inspector	150. 00
By carried to general fund to balance account	950. 30
	1, 000. 30

The audited indebtedness of the Territory September 30, 1889, was \$154,352.42.

The official vote of the election October 1, 1889.

Counties.	Congressman.			Governor.		
	Wilson.	Griffitts.	Majority.	Ferry.	Semple.	Majority.
Adams.....	250	442	117	261	141	119
Asotin.....	172	124	48	171	125	46
Chehalis.....	897	612	285	897	615	232
Clallam.....	235	220	15	222	232	*10
Clarke.....	1, 230	681	549	1, 216	692	524
Columbia.....	671	648	23	666	648	18
Cowlitz.....	666	354	312	663	355	311
Douglas.....	357	262	95	353	265	88
Franklin.....	52	76	*24	38	89	*51
Garfield.....	520	415	105	517	418	99
Island.....	175	103	72	180	100	80
Jefferson.....	866	637	229	867	633	234
King.....	4, 438	3, 367	1, 071	4, 319	3, 398	921
Kittitas.....	1, 399	1, 110	289	1, 339	1, 158	181
Kitsap.....	630	295	335	619	289	330
Klickitat.....	689	375	314	686	382	304
Lewis.....	1, 225	865	360	1, 219	868	351
Lincoln.....	1, 087	881	206	1, 104	863	241
Mason.....	319	307	12	322	304	18
Okanogan.....	307	226	81	4, 362	211	111
Pacific.....	575	138	367	494	150	344
Pierce.....	4, 442	3, 592	910	4, 362	3, 608	754
San Juan.....	268	101	167	264	104	160
Skagit.....	955	561	394	949	566	383
Skamania.....	60	74	*14	62	72	*10
Snohomish.....	882	652	238	880	659	221
Spokane.....	3, 208	2, 294	914	3, 256	2, 272	984
Stevens.....	452	354	98	460	350	110
Thurston.....	1, 091	697	394	1, 067	725	342
Wahkiakum.....	306	129	165	284	149	135
Walla Walla.....	1, 437	1, 179	257	1, 433	1, 186	247
Whatcom.....	1, 562	734	827	1, 534	742	792
Whitman.....	2, 099	1, 869	230	2, 149	1, 844	305
Yakima.....	584	488	96	537	519	18
Total.....	34, 039	24, 492	9, 547	33, 711	24, 732	8, 979

*Democratic majorities.

THE STATE TICKET.

Totals for other State officers are as follows:

For lieutenant-governor:		Land commissioner—Continued:	
Laughton.....	33, 998	Goodell.....	24, 344
Platter.....	24, 363	Majority.....	9, 787
Majority.....	9, 635		
Secretary of state:		Supreme judges:	
Wier.....	34, 014	Dunbar.....	34, 042
Whittlesey.....	24, 478	Stiles.....	32, 686
Majority.....	9, 536	Hoyt.....	33, 578
State treasurer:		Anders.....	34, 302
Lindsley.....	34, 203	Scott.....	33, 800
Kaufman.....	24, 469	White.....	24, 556
Majority.....	9, 734	Judson.....	24, 461
State auditor:		Sharpstein.....	25, 505
Reed.....	34, 162	Reavis.....	24, 533
Murphy.....	24, 125	Ganahl.....	24, 029
Majority.....	10, 037	For constitution.....	40, 152
Attorney-general:		Against.....	11, 879
Jones.....	34, 143	Majority for.....	28, 273
Snively.....	24, 411	For woman suffrage.....	16, 527
Majority.....	9, 732	Against.....	35, 613
Superintendent of public instruction:		Majority against.....	19, 086
Bryan.....	33, 443	For prohibition.....	19, 546
Morgan.....	24, 929	Against.....	31, 487
Majority.....	8, 514	Majority against.....	11, 941
Land commissioner:		For State capital:	
Forrest.....	34, 131	Olympia.....	25, 490
		North Yakima.....	14, 711
		Ellensburg.....	12, 833
		Centralia.....	607
		Yakima.....	314
		Pasco.....	130
		Scattering.....	1, 088

FOR SUPERIOR JUDGES.

The votes for superior judges were:

District No. 1:		District No. 7:	
R. V. Blake	3,598	N. H. Bloomfield	2,366
George W. Bell	2,662	J. A. Munday	1,452
		B. F. Dennison (Ind.)	240
Majority	936	Plurality	914
District No. 2:		District No. 8:	
W. N. Ruby	2,095	M. Irwin	2,531
C. M. Kincaid	1,890	T. N. Allen	2,437
Majority	209	Majority	94
District No. 3:		District No. 9:	
Wallace Mount	1,923	J. Applegate	3,871
N. T. Coton	1,582	F. Allyn	4,084
Majority	341	Majority	213
District No. 4:		District No. 10:	
W. H. Upton	1,388	J. A. Stratton	3,849
W. G. Lanford	1,230	L. J. Lichtenberg	3,956
Majority	58	Majority	107
District No. 5:		District No. 11:	
R. F. Sturdevant	1,274	N. B. Sachs	1,775
M. M. Godman	1,248	H. L. Blanchard	1,670
Majority	16	Majority	105
District No. 6:		District No. 12:	
C. P. Graves	3,026	J. J. Weisenberger	2,647
H. Dustin	1,582	J. R. Winn	2,671
Majority	1,444	Majority	24

TERRITORIAL BRIEFS.

[From Secretary Owings' Statistical Report for 1888.]

Area in square miles, 69,994.
Area in acres, 44,796,160.
Acres unsurveyed (about), 20,954,000.
Area of Straits of Juan de Fuca, 318 square miles.
Area of tide-water inside, 1,258 square miles.
Total tide-water in Territory, 1,576 square miles.
Shore line inside, 1,992 miles.
Channel line from Victoria to Olympia, 117 miles.
From Victoria to Cape Flattery, 72 miles.
Shore line from Cape Flattery to Columbia River, 170 miles.
Distance by sea, 156 miles.
Area of Lake Washington, fresh water, 41 square miles.

GOVERNORS OF THE TERRITORY.

[From Secretary Owings' Statistical Report.]

The Territory of Washington was set apart by the act of March 2, 1853. The following named comprise the list of governors appointed:

1. Isaac I. Stevens, from 1853 to 1857.
2. J. Patton Anderson, from 1853 to 1857.
3. Fayette McMullen, from 1857 to 1861.
4. R. D. Gholson, 1861.
5. W. H. Wallace, 1861.
6. Wm. Pickering, from 1861 to 1867.
7. Marshal F. Moore, from 1867 to 1869.
8. Geo. E. Cole, 1869.
9. Alvin Flanders, from 1869 to 1870.
10. Edward S. Salomon, from 1870 to 1872.
11. James F. Legate, 1872.
12. Elisha P. Ferry, from 1872 to 1880.
13. W. A. Newell, from 1880 to 1884.
14. Watson C. Squire, from 1884 to 1887.
15. Eugene Semple, 1887 to 1889.
16. Miles C. Moore, 1889.

Of the above, J. Patton Anderson, R. D. Gholson, J. F. Legate, and W. H. Wallace did not qualify.

CONDENSED STATISTICS.

Total population April, 1889.....	239,544
Population of eastern Washington.....	97,258
Population of western Washington.....	142,286
Total number of children under 21.....	97,416
Total number of children enrolled in public schools.....	46,751
Teachers employed.....	1,349
Number of persons subject to military duty.....	55,000
Number of officers and men in National Guard (2 regiments).....	845
Number of convicts in Territorial penitentiary.....	172
Number of patients in hospital for insane, at Steilacoom.....	303
Number of pupils in school for defective youth.....	26
Number of miles of railroad within the Territory.....	1,548
Total value of taxable property.....	\$124,795,449
Vote for Congressman:	
In 1888.....	46,353
In 1889.....	58,541
Majority against woman suffrage, 1889.....	18,086
Majority against prohibition, 1889.....	11,941
Majority for the constitution, 1889.....	28,263
Vote for permanent seat of government:	
Olympia.....	25,490
North Yakima.....	14,718
Ellensburg.....	12,833
Scattering.....	1,088

The new map of Washington Territory, referred to on page 46 of the Annual Report of the Commissioner of the General Land Office for the year 1889, is made a part of this report.

R E P O R T
OF
THE GOVERNOR OF WYOMING.

EXECUTIVE DEPARTMENT,
Cheyenne, October 15, 1889.

SIR: Complying with your request of July 19, I have the honor to submit herewith my annual report for 1889, which contains the latest reliable data obtainable on the general condition and progress of Wyoming Territory. Its preparation has been somewhat delayed in order that the information contained in the reports of Territorial officers, for the year ending October 30, 1889, could be made available, and that I might also submit the results of the labors of the constitutional convention recently adjourned.

The reports of the governor to the Secretary of the Interior, in the absence of any other statistical reports, have always been regarded as valuable documents for disseminating knowledge on the resources of the Territory, and at no time in the history of Wyoming has the demand from outside the Territory been greater than now for reliable information on all subjects treated in these reports. In view of this and the importance which the people of Wyoming attach to the question of statehood, I have deemed it desirable to present as complete a report as possible at this time.

Acknowledgments are due Mr. Robert C. Morris, statistician, Mr. Elwood Mead, Territorial engineer, Mr. L. D. Ricketts, Territorial geologist, and others, for valuable aid in preparing this report.

THE TERRITORY.

Wyoming, the youngest of the Territories, occupies a space between the twenty-seventh and thirty-fourth meridian of longitude west and the forty-first and forty-fifth degree of north latitude, about 2,000 miles west from the Atlantic Ocean and 800 miles east of the Pacific, forming a parallelogram 365 miles east and west by 275 miles north to south, and containing nearly 100,000 square miles, or an area about as large as the six New England States and Indiana combined. It is bounded by Montana on the north, Dakota and Nebraska on the east, Colorado and Utah on the south, and Utah, Idaho, and Montana on the west. The larger part of the present Territory was acquired by the Louisiana purchase from France in 1803, but a small portion of southwestern Wyoming was obtained by the relinquishment of Mexico in the treaty of peace signed 1848.

Under an act of Congress approved July 25, 1868, Wyoming was created from what was then the southwestern portion of Dakota, the northeastern part of Utah, and the eastern part of Idaho.

The country was then to a great extent unexplored, wild Indians roved over the greater portion of the Territory, and life and property were nowhere secure. There were but a mere handful of white settlers within its borders, probably less than 3,000 actual residents. These had followed the construction of the Union Pacific Railroad, which entered near the southeast corner and traversed westward along the southern part of Wyoming, making possible the organization and settlement of the Territory.

Previous to 1840 very little was known of the country west of the Missouri. The mineral wealth of the country remained undiscovered and no one had been successful in reclaiming by cultivation the land from its desert character. Even as late as 1843, Washington Irving, in the *Adventures of Captain Bonneville*, describing the Rocky Mountain region now occupied in part by Wyoming, makes the following prediction of the future of the country and its people:

Some new system of things, or rather some new modification, will succeed among the roving people of this vast wilderness; but just as opposite, perhaps, to the inhabitants of civilization. The great Chippewyan chain of mountains and the sandy and volcanic plains which extend on either side are represented as incapable of cultivation. The pasturage which prevails there during a certain portion of the year withers under the aridity of the atmosphere, and leaves nothing but dreary waste. An immense belt of rocky mountains and volcanic plains, several hundred miles in width, must forever remain an irreclaimable wilderness, intervening between the abodes of civilization, and affording a last refuge to the Indian. Here roving tribes of hunters living in tents or lodges, and following the migrations of the game, may lead a life of savage independence, where there is nothing to tempt the cupidity of the white man. The amalgamation of various tribes and of white men of every nation will in time produce hybrid races like the mountain Tartars of Caucasus. Possessed as they are of immense droves of horses, should they continue their present predatory and warlike habits, they may in time become a scourge to the civilized frontiers on either side of the mountains, as they are at present a terror to the traveler and trader.

It is not strange that Irving, with a matchless power of description, should have laid the foundation of an opinion of the utter barrenness of the Rocky Mountain region that it is almost impossible to remove from the minds of those who have not witnessed the marvelous growth of the far West, even to this day. He little dreamed what railroads, the discovery of vast mineral wealth, and the application of modern machinery would do in developing the vast resources of the West. No more can we, comparing the past with the present, comprehend the great destiny that awaits the development of Wyoming within the next fifty years.

As late as 1870, the total population of Wyoming did not exceed ten thousand. The entire northern part of Wyoming was overrun with Indians, and it was not until 1876-'77 that General George Crook succeeded in bringing these warlike tribes to peace.

The tribes of Indians then occupying Wyoming were the Sioux, Crows, Arapahoes, Shoshones, and remnants of other tribes. They remained here in greater or less numbers until compelled to go upon reservations elsewhere, the Utes on the south, in Colorado, the Sioux on the western limits of Dakota, and Crows on the southern limits of Montana, and the Shoshones and Arapahoes near the eastern limit of Idaho and a reservation in the Wind River Valley of Wyoming. The early settlement and industrial interests of Wyoming were much retarded through the hostility of these tribes, miners and settlers being driven from their mines and homes. To-day there are no Indians within the limits of Wyoming, except the Arapahoes and the Shoshones. These Indians occupy the Wind River Reservation, covering an area of 1,520,000 acres. They are

peaceful and have made some progress in education and agricultural pursuits.

Wyoming takes its name from the Indian word "Maughwanwame," meaning plains, and first had its application in the Wyoming Valley of Pennsylvania. The general surface of the Territory is mountainous, with foot-hills, bold bluffs, broad rolling plains or undulating plateaus, with a mean elevation of about 6,000 feet. The average elevation is 1,000 feet less than Colorado. The extremes range from 3,000 to 14,000 feet above the sea level. Numerous rivers and their tributaries flow throughout the Territory, while the sublimity and grandeur of scenery is unsurpassed by any part of the globe. The principal ranges of mountains in Wyoming are the Wind River in the northwest, the Big Horn north of the center, the Black Hills in the northeast, the Laramie range south of the center, and the Rattlesnake and Sweetwater in the central portion of the Territory. Several of the great rivers of the continent, including the Missouri, the Colorado, and the Columbia, have their headwaters in Wyoming. The Yellowstone and its tributaries, the Big Horn, Powder, Little Missouri, and Cheyenne, flow from the northern part of the Territory emptying into the Missouri, on the north; the Green River and its tributaries traverse the southwest flowing into the Colorado; the Snake River is the chief tributary of the Columbia in the west, and the north fork of the Platte with its many tributaries flows through the center and southeastern portion of Wyoming. None of the rivers of the Territory are navigable, but they are the natural avenues for railroads, and along their banks will be located the future cities and towns of the commonwealth. The rich mineral treasures of the mountains will be poured into the valleys and plains, which in turn will supply the agricultural and stock-raising products.

Wyoming has a total area of 62,645,120 acres, of which the greater portion is adapted to grazing and agriculture. It is estimated that between 12,000,000 and 15,000,000 acres can be successfully cultivated, and that nearly 10,000,000 acres are covered with timber. The soil is generally a rich sandy loam, and where it is irrigated below 7,500 feet produces abundantly all the cereals, vegetables, and fruits common to the northwestern States. Farming is not yet carried on in very many places, the chief industry being stock-raising. A marked change, however, is rapidly taking place in the combination of pastoral and agricultural pursuits. The stock-raising industry comprises nearly one-half the total wealth of the Territory; but five years ago this industry represented more than three-fourths the entire valuation of property. Other industries have increased faster than live-stock raising, and the extension of railroads will give greater prominence to other interests. The geological surveys of Wyoming demonstrate that the outcropping and underlying material forming its physical structure is greatly varied in character, nearly all the precious, superior, and baser metals being found in large quantities. With the exception of coal, the output of which last year exceeded \$5,000,000, the mineral wealth of Wyoming can hardly be said to be developed. Coal is found in every county of the Territory in inexhaustible quantities, and extensive basins of petroleum are known to exist in northeastern, central, and southwestern Wyoming. There are also mountains of valuable iron ore, vast deposits of gypsum, soda, salt, sulphur, copper, lead, tin, mica, and other minerals; also marble, granite, sandstone, mineral paint, kaolin, fire-clay, graphite, cinnabar, and magnesium. Gold and silver bearing ore has been found and profitably worked in numerous localities. Much of this wealth is remote from railroads, and only awaits the advent of

the iron horse before inviting capital for investment. The climate is healthful, and has been pronounced by high authority as the most salubrious of North America.

STATEHOOD.

The people of Wyoming want statehood. Men who have braved all the perils of pioneer life, have laid broad and deep the foundations of future homes, towns, and cities, and have treasured up the means that is to uphold the commonwealth are not unmindful of the advantages of state government.

Although the present Administration has greatly relieved the situation by appointing all Territorial officers from the bona fide residents of the Territory wherein they are to serve; the people know from past experience what it is to live under a Territorial form of government, governed by strangers with little or no knowledge of the wants of the Territory, and indifferent to its future growth and prosperity.

There are men who have lived in Wyoming for more than twenty years, and have never cast a vote for President. They desire the full benefits of citizenship. Wyoming has the wealth, the moral worth, and the intelligence to bear the burdens of statehood, and its citizens are anxious to assume that condition with all its cares and responsibilities, with all its blessings and privileges.

Attention was first directed to the subject of statehood in my annual report as governor to the Secretary of the Interior in 1885, and again in 1886. It was not, however, until the Fiftieth Congress that Hon. Joseph M. Carey, delegate for this Territory, introduced a bill for the admission of Wyoming as a State, and the tenth legislative assembly, in February, 1888, memorialized Congress on the same subject. Early in 1889 the Senate Committee on Territories reported favorably on the bill to admit Wyoming, and about the same time a bill was also favorably reported in the House of Representatives intended to enable the people of Wyoming, Arizona, and Idaho to formulate constitutions with a view of being admitted into the Union on an equal footing with the other States.

In assuming the office of governor, on the 9th day of April last, I expressed in my inaugural address a willingness to co-operate with the people in securing the admission of Wyoming as a State. The following month a majority of the counties of the Territory, through the several boards of county commissioners, requested the executive, with the aid of the chief-justice and secretary, to apportion the number of delegates, and to do such other acts as would be necessary for convening a constitutional convention in the manner and form prescribed by Senate bill No. 2,445. In conformity with the request an apportionment was made on the 3d day of June, 1889, and a proclamation issued designating the second Monday in July, 1889, for an election of delegates to a constitutional convention to convene at the capitol at Cheyenne, on the first Monday in September following, for the purpose of framing a constitution for the State of Wyoming, and submitting the same to the people for ratification or rejection. An election having been held, the convention assembled at Cheyenne, and was in session from the 3d day of September to the 30th, inclusive. The result of their labor is embodied in a constitution and address to the people and Congress, which are attached and made a part of this report, together with the apportionment and proclamation above referred to.

POPULATION.

The first census of Wyoming Territory was taken in 1870, and showed a total population of 9,118, as follows:

Counties.	Males.	Females.	White.	Colored.	Total.
Albany.....	1,635	386	1,971	50	2,021
Carbon.....	1,193	175	1,360	8	1,368
Laramie.....	2,240	717	2,822	135	2,957
Sweetwater.....	1,492	424	1,777	139	1,916
Uinta.....	659	197	796	60	856
Total.....	7,219	1,899	8,726	392	9,118

The full vote for delegate in Congress at that time was 3,202, or a little more than one vote to every three persons.

It will be observed that nearly three-fourths of the total population were males, and nearly all were adults. There were but few children and scarcely a school-house in the country, while at the present time there are many thousands of children and school-houses in nearly every district.

The population, according to the census of 1880, was 20,789, distributed as follows:

Counties.	Males.	Females.	White.	Colored.	Native.	Foreign.	Total.
Albany.....							4,626
Carbon.....							3,438
Laramie.....							6,409
Sweetwater.....							2,561
Uinta.....							2,879
Crook.....							239
Johnson.....							637
Total.....	14,152	6,637	19,490	299	14,944	5,845	20,789

The vote in 1880 was 7,667.

As communities grow older the ratio in population compared with the vote increases, a change especially noticable in Wyoming, which is now a community of homes and families. Well informed judges on the subject, that have lived in the Territory since its organization, estimate the present population from 95,000 to 105,000. They believe that the vote should be multiplied by 5 or 6, notwithstanding that women have the right of suffrage.

Wyoming is the eighth largest in size of the political divisions of the Union, her population in proportion to the area small, and the inhabitants widely scattered. But few voting places are made, and many people live one to three days' journey from the polls. On account of this condition not one man in twenty in the stock business and not one in fifty of those engaged in prospecting or mining reach the polls.

In coal mines and in cities and towns a large number of aliens who have no vote are employed.

A change in the law requiring six months' residence instead of ninety days to vote debars many newcomers from voting.

Wyoming's population being largely medium-aged, the proportion of children is unusually large.

Since 1880 no census has been taken. In 1884 the vote was 12,811, an increase of nearly 70 per cent in four years. In 1888 the vote for Delegate in Congress was 18,010, an increase of over 40 per cent. There has been a constant increase in Wyoming's population, and the gain has been very much greater than shown by the vote, for reasons already given.

Wyoming is nearly 50 per cent. larger than the entire six New England States. It is in part mountainous and undeveloped, with scant railroad, stage, and post facilities, and many people living in remote districts. Census taking by the Government does not provide sufficient compensation to insure perfect work in such a field, and the taking of a full and complete census has been, and will be for some years, exceedingly difficult.

TAXABLE PROPERTY.

The increase of wealth in Wyoming is shown by an examination of the assessment rolls since the organization of the Territory. These statements do not represent more than one-third of the actual valuation of the property assessed, and probably not more than one-quarter of the actual value of property; but they represent a uniform assessment of value from year to year, and therefore afford a correct basis of comparison. The total assessed valuation of all property in 1870 was \$6,924,357. In 1880 it had increased to \$11,857,344; and in 1888, to \$33,338,549. A depreciation of over \$5,000,000 from 1886 to 1888 in the assessment list of live-stock was made up in the increase of other property. Notwithstanding the heavy losses in live-stock interests, the total Territorial valuation has steadily increased. The assessment in 1889 of \$6,163,336.50 on railroad property is almost equal to the entire valuation of property in Wyoming in 1870. The low rate of assessment is apparent when it is stated that the total railroad equipment in Wyoming has cost, according to competent authorities, not less than \$35,000,000, and is assessed at less than one-fifth of that sum. Other property is not assessed as low accordingly, but it is safe to estimate the wealth of Wyoming at \$100,000,000, or about three times its assessed valuation.

The financial affairs of Wyoming have been well managed, and the credit of the Territory stands high. The Territorial bonds, which bear 6 per cent. annual interest, sold last year at an average premium of 12 per cent. The law for raising Territorial and county revenue provides that there shall be levied upon the taxable real and personal property each year the following taxes:

First. For Territorial revenue, 2 mills on the dollar when no rate is directed by the Territorial board of equalization before the date in each year when the tax ought to be levied and assessed, but in no case shall the tax for Territorial purposes exceed 4 mills on the dollar.

Second. For county revenue for ordinary county expenses, not more than 5 mills on the dollar.

Third. For county revenue for support of the poor and lunatic purposes, not more than 2 mills on the dollar.

Fourth. For county revenues for road purposes, not less than 1 mill nor more than 3 mills on the dollar.

Fifth. The county commissioners of each county shall levy a tax sufficient to defray the expenses of the district courts for their respective counties during each year.

Sixth. And in addition to the above the county commissioners shall levy a poll-tax of \$2 for county school purposes against each person over the age of twenty-one years and under the age of fifty years, which shall be levied and collected as other taxes; and they also levy a tax for the support of common schools in their county not to exceed 3 mills on the dollar; but the aggregate tax for Territorial and county purposes shall in no case exceed 16 mills on the dollar per annum.

On January 1, 1886, Wyoming had a cash balance on hand of \$31,175.45 and no outstanding obligations. The Territorial taxes since

that time have been increased over previous years on account of appropriations for permanent improvements, such as public buildings. These appropriations, however, have at all times been within the limits of the laws. The same careful economy which has characterized the management of Territorial affairs, with few exceptions, has been carried out in the counties and towns of the Territory.

The legislature of 1886 authorized the issuing of \$230,000 bonds for public buildings, payable in fifteen and thirty years, bearing an annual interest of 6 per cent. These bonds were sold at a premium, and were issued from time to time as the money was needed to carry on the work of construction. An additional appropriation of \$90,000 forty-year bonds was provided for by the legislative assembly of 1888, and sold at an average premium of 12 cents on the dollar. The following is a statement of the total bonded indebtedness of Wyoming:

Capitol building bonds (authorized in 1886).....	\$150,000
University building bonds (authorized in 1886).....	50,000
Insane asylum building bonds (authorized in 1886).....	30,000
Public building bonds (authorized in 1888):	
University building.....	\$25,000
Insane asylum.....	30,000
Poor farm.....	5,000
Commencement of penitentiary.....	30,000
	90,000
Total.....	320,000

Wyoming has no floating indebtedness, and had, October 1, 1889, \$47,752.76 cash in the Territorial treasury.

The following shows the increase in lands passing into the hands of owners and becoming taxable:

Acres of land assessed, exclusive of town property.

County.	1886.	1889.	County.	1886.	1889.
Albany.....	70,596	955,866	Laramie.....	180,637	915,140
Carbon.....	35,864	1,201,627	Sheridan.....		63,480
Converse.....		51,317	Sweetwater.....	12,308	1,800,000
Crook.....	21,739	91,802	Uinta.....	23,102	679,004
Fremont.....	8,232	31,914			
Johnson.....	42,311	78,220	Total.....	394,789	5,868,370

The following statement shows the assessed valuation of property in Wyoming Territory from 1870 to 1889, inclusive:

Total assessed valuation.

Years.	Total valuation.	Years.	Total valuation.
1870.....	\$6,924,357	1880.....	\$11,857,344
1871.....	7,018,531	1881.....	13,987,675
1872.....	7,591,846	1882.....	17,746,627
1873.....	7,594,722	1883.....	22,962,545
1874.....	8,147,902	1884.....	26,308,620
1875.....	9,493,638	1885.....	30,717,249
1876.....	9,674,576	1886.....	31,020,784
1877.....	10,038,689	1887.....	32,089,613
1878.....	11,606,339	1888.....	*33,338,541
1879.....	12,354,812	1889.....	†31,431,495

* An error in double assessment afterward reduced the figures given in the above statement for 1888.

† The valuation above for 1889 is not entirely complete. Some additional property will be added.

Tables showing the enumeration and classification of property and assessment on each class, also division of property in counties, with all totals, will be found near the end of this report.

FINANCES.

The financial standing of Wyoming is high. Bonds of the Territory bearing 6 per cent. annual interest sold at above 12 per cent. premium, and Territorial warrants are always par and promptly paid when presented. Neither the Territory nor any county, school district, or city has ever defaulted in the payment of any bond or interest. No national bank has ever suspended or gone into liquidation, and but four private banking institutions have failed since the organization of the Territory. There have been few mercantile failures, and individual financial responsibility through the Territory is of a high order.

Banks.—The growth of banking institutions in Wyoming indicates perhaps better than any other line of business the material prosperity in different branches of trade. In 1871 there was only one national bank in the Territory, having a capital of \$75,000. At the present time there are nine national banks, having a total capital of over \$1,000,000, and eleven private banks. The following exhibit is taken from the last report of the Comptroller of the Currency :

Summary of national banks, the important items of resources and liabilities, and the totals, etc., in Wyoming Territory.

Year.	No. of banks.	Loans and discounts.	U. S. bonds.	Cash and cash items.	Capital.	Surplus.	Undivided profits.	Outstanding circulation.	Individual deposits.	Total.
1871...	1	\$77,000	\$30,000	\$15,000	\$75,000	.....	\$3,000	\$27,000	\$55,000	\$161,000
1872...	1	99,000	30,000	26,000	75,000	.....	5,000	27,000	81,000	188,000
1873...	2	203,000	60,000	34,000	125,000	.....	23,000	51,000	162,000	363,000
1874...	2	199,000	60,000	58,000	125,000	\$10,000	26,000	54,000	190,000	412,000
1875...	2	246,000	60,000	62,000	125,000	16,000	49,000	49,000	297,000	539,000
1876...	2	198,000	60,000	96,000	125,000	21,000	29,000	50,000	265,000	498,000
1877...	2	303,000	60,000	89,000	125,000	25,000	62,000	52,000	311,000	580,000
1878...	2	285,000	60,000	129,000	125,000	25,000	89,000	42,000	369,000	657,000
1879...	2	385,000	60,000	79,000	125,000	50,000	58,000	53,000	444,000	753,000
1880...	2	492,000	64,000	109,000	150,000	50,000	39,000	52,000	535,000	841,000
1881...	3	730,000	94,000	201,000	225,000	50,000	48,000	83,000	856,000	1,306,000
1882...	4	991,000	194,000	219,000	425,000	78,000	71,000	127,000	1,185,000	1,928,000
1883...	4	1,313,000	219,000	242,000	425,000	103,000	95,000	123,000	1,004,000	2,436,000
1884...	4	1,604,000	235,000	209,000	525,000	78,000	107,000	138,000	1,418,000	2,509,000
1885...	5	1,861,000	155,000	309,000	800,000	140,000	152,000	140,000	1,744,000	3,067,000
1886...	6	2,335,000	180,000	401,000	900,000	167,000	193,000	160,000	1,768,000	3,398,000
1887...	8	2,527,000	224,000	305,000	1,075,000	210,000	180,000	201,000	1,697,000	3,568,000
1888...	9	2,419,000	249,000	298,000	1,175,000	213,000	115,000	221,000	1,731,000	3,654,000

The following banks are now doing business in this Territory :

Town.	County.	Name of bank.	Capital.	Surplus.
Buffalo.....	Johnson.....	First National.....	\$50,000	\$16,000
Casper.....	Natrona.....	Bank of Casper.....	5,000	.....
Cheyenne.....	Laramie.....	Cheyenne National.....	100,000	12,000
Do.....	do.....	First National.....	200,000	75,000
Do.....	do.....	Stock Growers' National.....	400,000	64,000
Do.....	do.....	T. A. Kent.....	100,000	.....
Douglas.....	Converse.....	First National.....	75,000	10,000
Evanston.....	Uinta.....	Mutual Exchange Bank.....	35,000	7,375
Do.....	do.....	Beckwith & Co.....	78,000	3,000
Green River.....	Sweetwater.....	Hunter & Morris.....	25,000	.....
Lander.....	Fremont.....	First Lander Bank.....	.....	.....
Laramie City.....	Albany.....	Albany County National Bank.....	100,000	27,000
Do.....	do.....	Laramie National Bank.....	100,000	28,000
Do.....	do.....	Wyoming National Bank.....	100,000	.....
Lusk.....	Converse.....	Richards Bros.....	.....	.....
Rawlins.....	Carbon.....	J. W. Hugus & Co.....	50,000	.....
Rock Springs.....	Sweetwater.....	First National.....	50,000	500
Sheridan.....	Sheridan.....	Bank of Sheridan.....	50,000	.....
Sundance.....	Crook.....	Bank of Sundance.....	25,000	1,500
Do.....	do.....	Crook County Bank.....	10,000	2,500

Interest rates.

	Per cent.
Legal rate of interest on public indebtedness.....	8
Legal rate of interest on all other indebtedness when no contract is made ...	12
Bank loans on short time.....	12
Real-estate loans, one year	7 to 12
Real-estate loans, two or more years	7 to 10
Interest paid on bank deposits.....	6 to 8
Interest on Territorial bonds	6
Interest on municipal and school bonds	6
(A few of the first issued bonds of this character carry 7 and 8 per cent.)	
Interest on city, county, or Territorial warrants.....	8
Interest on long loans, well secured.....	6

Judgments draw 12 per cent., book accounts draw, after thirty days from date of last item purchased, 12 per cent. Any rate of interest agreed upon in contract is legal.

SETTLEMENT OF LANDS.

Public lands.—The total number of acres of land in Wyoming is 62,645,120, of which 47,596,141 acres have been surveyed. There remain unsurveyed 15,548,979, or about one-quarter of the total area.

Land matters in this Territory were seriously hampered for several years by the withholding of patents and the disposition of those in authority to regard with suspicion the men who were trying to settle and make habitable the public domain, to push ahead land and ditch surveys and other necessary work. This policy has seriously retarded the development of the country; but the recent action of the General Land Department in issuing numerous patents a long time wrongfully withheld has greatly improved the condition of things.

It is evident the United States land laws in relation to acquiring title to public lands were originally made in view of settling up the more fertile prairie States, and when applied to our mountain regions, where crops are seldom raised without artificial irrigation, work great hardship and injustice to actual settlers. In the Mississippi and Missouri valleys there is a plentiful fall of rain, and 160 acres located in almost any part of that section is generally regarded sufficient for a fine farm; but in Wyoming, leaving out a limited area of land along the streams, 160 acres would scarcely support five full-grown domestic animals without largely increased expenditures in taking out ditches and water. Under the land laws and regulations of the Department our citizens have been held to the same rulings as the more fortunate settlers in the western States, and compelled to pay the same price for inferior lands. Bills have been introduced in Congress which, if passed, will repeal the desert-land laws, depriving us of the advantages conferred by this act, and also repeal the pre-emption and timber-culture acts. A thorough knowledge of the character of the land on the part of those who legislate on this subject will, in my opinion, lead to a more liberal policy in dealing with the people of the arid region.

Public surveys.—There is complaint on the part of settlers that they are unable in many instances to fix the boundaries of the land on which they are located, on account of erroneous and fraudulent surveys, and the necessity of making resurveys in order to locate accurately some of the disputed claims is very important.

Doubtless the majority of these faulty surveys were made under the "special deposit system," during which period alleged fraudulent returns were made of surveys unattempted or erroneously performed. These errors should be corrected by prompt resurveys. I am informed

than these defects can in many cases be remedied at a very small expense if the townships from which complaints come can be examined by an expert who could determine what lines should be retraced.

It would much benefit this Territory if Congress would adopt a more liberal policy in the matter of public surveys. By the terms of the appropriation bills of late years no surveys were authorized except of agricultural lands occupied by settlers. As the surrounding lands were not classed as agricultural, no contracts could be made for the survey of many of these agricultural districts, because the compensation was not sufficient to pay for their segregation. The effect of this is, that there are many settlers who have been living upon unsurveyed lands for many years improving their farms and raising crops. One of the finest agricultural exhibits displayed at our last Territorial fair was grown upon unsurveyed lands. The inability of a settler to obtain a legal right to the land selected by him for a home works a threefold injury; first, to the Government, which receives no pay for the land; next, to the county and Territory, which derive no revenue from it, and lastly, to the settler, who can obtain no title to the land and is hazard-ing his improvements, which are of no value to him in a commercial sense, as he can neither sell nor mortgage them. Moreover there are large tracts of unsurveyed land in this Territory which are valuable for other purposes than agriculture. There are immense oil fields and coal beds and vast forests of valuable timber yet unsurveyed. In its present unknown condition it is impossible to protect the forests against the depredations of unscrupulous men, and the development of the coal and oil lands is retarded by the impossibility of surveying them under the present restrictions.

The number of acres of public lands disposed of in Wyoming for cash and under the homestead and timber-culture acts, located with agricultural college and other kinds of scrip, located with military bounty land-warrants, and selected by the Territory and by railroads, aside from Union Pacific Railway land grant, is as follows:

Year.	Acres.	Year.	Acres.
1876.....	7,487.42	1884.....	595,786.88
1877.....	5,156.00	1885.....	552,967.14
1878.....	23,333.67	1886.....	453,572.51
1879.....	33,330.64	1887.....	424,780.20
1880.....	44,146.83	1888.....	242,306.78
1881.....	48,955.92	1889.....	301,375.51
1882.....	58,307.25		
1883.....	187,488.65	Total	2,978,995.40

The above does not include lands disposed of prior to 1876, of which some 5,000,000 acres were Union Pacific Railway subsidy lands, now largely disposed of and occupied by private owners.

From the above figures it will be seen that there are many million acres of Wyoming lands open for settlement under homestead, pre-emption, and other privileges, and the field is rich for the emigrant desiring a new country and early privileges in the selection of lands.

United States land offices are located at Cheyenne, Buffalo, and Evanston. There is need of land offices in other parts of Wyoming.

Sale of public lands.

The following figures furnish some particulars regarding the disposal of public lands during the fiscal year of 1888 in Wyoming.

Nature of transaction.	Number.	Acres.	Amount.
Sales of lands subject to pre-emption.....	279	42,244	\$56,753.76
Sales of mineral lands.....	5	155	545.30
Original entries under desert-land act.....	220	73,782	24,520.78
Final entries under desert-land act.....	234	85,285	85,470.78
Homestead entries commuted to cash.....	24	3,703	5,429.95
Sales of coal lands.....	42	6,590	104,809.40
Total cash sales.....	804	211,764	277,529.97
Original entries under homestead laws.....	420	65,959	7,246.00
Final homestead entries.....	81	12,253	555.00
Original entries under timber-culture laws.....	360	53,260	4,865.00
Total miscellaneous entries.....	861	131,472	12,666.00
Pre-emption filings.....	640		
Homestead filings.....	6		
Coal filings.....	139		
Mineral applications.....	16		
Aggregate.....	2,466	242,306	290,195.97

The expenses incident to the service were: Salaries, \$12,206.55; incidental expenses, \$4,020.63; expense of depositing, \$238.90; total, \$16,466.08.

Reservations.—The following is a list of the total area of military and Indian reservations in Wyoming:

	Acres.
Fort Bridger.....	10,240
Fort Laramie:	
Post reserve.....	34,560
Wood and timber reserve.....	39,690
Fort D. A. Russell:	
Adjoining city of Cheyenne.....	4,512
Wood reserve.....	2,540
Fort Washakie, within Shoshone Indian Reservation.....	1,405
Fort McKinney, post reserve and wood and timber.....	26,240
	119,187
Shoshone Indian or Wind River Reservation.....	1,520,000

There are also the abandoned military reservations of Fort Sanders and Fort Fetterman, that ought to be opened up to settlement or sale, preferably the former. Both reservations are located on a line of railroad, contiguous to growing towns, and their settlement would advance the general prosperity of the community.

Arid lands.—Wyoming is within what has been known as the Arid Region, and while crops are raised in a number of localities without water artificially applied, yet irrigation is necessary in many places and beneficial in nearly all.

There will be found in (part 2) this report valuable data, furnished by Elwood Mead, Territorial engineer, on the subject of irrigation as bearing upon these lands.

In this same connection I quote from the late report made by Mr. J. R. Dodge, statistician of the United States Department of Agriculture, who has recently visited Wyoming. He says:

The desert of a few years ago, so bare and barren and so hopeless, in the view of all beholders, estimated only at the value of its carrying capacity for range cattle and

sheep, is rapidly changing in appearance and in public appreciation. Its eastern portion, as a newly-found "rain belt," has been carved into homesteads and farmed without regard to irrigation. It was held alike by sage and citizen twenty years ago that half of Nebraska was agricultural, the other half pastoral; that successful agriculture could not be expected to succeed beyond the 100th meridian. The settler gradually moved westward and, utterly regardless of this dictum, passed the desert line, building his cabin and turning the soil and growing corn, stopping not even at the Colorado line. * * * He had been told that a year of drought and starvation would come, and some pinching droughts have confronted him, as they have the farmer of Illinois; still he has pushed westward with heroic determination, breaking and subduing the soil, and showing by his improvements that he is there to stay. * * * Deep breaking, subsoiling, and frequent cultivation, processes the very reverse of those practiced by the pioneer farmer, are the sources of the new prosperity. * * *

There is a change of climate. The agricultural values of the climate have increased. The moisture that was before carried away, flowing from the surface like water from a duck's back, is taken up by the roots of plants, given out through their leaves or evaporated from the surface of the soil, and a marked increase of humidity of the atmosphere is the result which is shown in dews unknown before. This humidity is a factor in plant growth, though it is not made apparent by such a measure of precipitation as the rain-gauge.

Thus the homestead area, supposed to be limited to 200 miles west of the Missouri, already extends about 400 miles.

After all that has been done in dry farming, irrigation is a necessity. The land is almost everywhere fertile, generally to excess, lacking only water to insure large and certain production. This source of production can be more fully utilized, greatly enlarging the dominion of agriculture, though it can not render productive the entire area. In Colorado some are inclined to claim adequate water supply for one-fifth of the surface; while others, including local engineers of experience, think that not more than a tenth can be irrigated. The different stages of progress in water utilization are six in number.

1. The use of the rain-fall in what are properly known as rain belts, by the most effective methods of cultivation, and the selection of suitable plants, especially those with long tap roots.

2. The exhaustion of the supply furnished by rivers and creeks in their passage through the plains, by means of irrigation works, such as are already in so extensive use.

3. The enlargement of the current supply by the storage, at higher elevations, of water which passes away in spring floods, as is proposed now by the Government.

4. The sinking of galleries below the surface of streams, even when they are practically dry, and utilizing by canals the under-ground currents. This is becoming a common and popular resource. Such a plan furnished pure, filtered water at Cheyenne, for the supply of the city, without pumping or much expense, from Crow Creek, a small stream, nearly dry in summer.

5. By the use of irrigating pumps of great power in lifting such under-ground currents to the surface from bed rock, for application to lands surrounding.

6. By artesian wells, which have hitherto proved too expensive for use in irrigation. It is probable that their cost and the uncertainty of obtaining water will prevent extensive employment of this means of water supply.

The building of numerous catch-basins throughout the plains to save the rain-fall which is wasted, so far as the lands near by are concerned, will add greatly to the supply furnished by the second expedient indicated. There are natural depressions everywhere which can be utilized at very slight cost and with entire immunity from risks of dangerous floods.

The utilization of surface water does not exhaust the supply for irrigation. The application involves waste. The fugitive waters, as if by an instinct of preservation from threatened dissolution under the fierce rays of the unobscured sun, sink through the sands, pass into the depressions which make the water-ways, and gradually swell the scanty streams at lower levels, or course their way towards the sea through the sands below the river beds. Thus, a part of the water of irrigating canals is gathered a second time to do the work of irrigation.

COMMERCE AND THE PROGRESS OF RAILROAD ENTERPRISES.

Wyoming is without navigable rivers to give an outlet to the products of its mines, farms, and stock ranges, and its commerce must depend on the extension of railroads.

The Territory has, however, some six hundred rivers and creeks, from which water is taken for irrigation, and there are numerous streams

that have not been used for that purpose. All these streams furnish good grades for railroad building.

The contour of the Territory is such that streams heading near the tops of the mountains flow in almost every direction. On account of the ascending grades along streams on one side of the mountains, and others descending on the opposite side, it requires at the top of mountains or divides little heavy work or tunneling in railroad building to cross the ranges. Railroads, in most instances, can be constructed in any direction, and easy crossings made of divides, notwithstanding the general appearance of a section may seem exceedingly mountainous.

Railroads.—The following shows the total number of miles of main lines of railroad operated in Wyoming on June 30, 1889:

	Miles.
Union Pacific Railway Company	489
Oregon Short Line	93
Denver Pacific	10
Laramie, North Park and Pacific	13
Cheyenne and Northern	125
Wyoming Central (Northwestern)	130
Cheyenne and Burlington	29
Total	889

Union Pacific.—The completion of the Union Pacific in 1868 opened Wyoming to settlement. Without the construction of a transcontinental railroad, the Territory would have remained uninhabited except by savages and wild game for many years. From 1868 until 1887 very little railroad building was done in the Territory. In 1887 the Wyoming Central, a branch of the Northwestern, and the Cheyenne and Burlington reached Wyoming. In January, 1887, there were reported 624 miles of railroad in Wyoming, representing, according to authorities, a total investment of \$33,146,621. Since that time the roads above mentioned have been extended and numerous railroads projected, which promise to gridiron the Territory in all directions.

The great want of Wyoming to-day is railroads to give an outlet to its varied productions, especially its oil, coal, and other mineral products, and to fill its valleys with a numerous and prosperous population.

The completion of the main line of the Union Pacific Railway resulted in opening up and stimulating the development of the agricultural and mineral resources of the vast territory which it traversed. Local traffic sprang up along the line of the road and promoted the construction of branch lines as feeders to the main. A few feeders only have been built, but others are necessary, also the further extension of those already commenced. The Union Pacific needs branch lines to foster and protect its local traffic and to furnish business for its system, and the country requires more railroads to promote its occupancy and settlement.

The operations of the Union Pacific are said to be seriously embarrassed by the unsatisfactory relations existing between the Government and the railway company, and the inhabitants of this country are the sufferers because of the lack of necessary railroad development. Congress should arrange a speedy settlement and one that would admit of the Union Pacific being granted the right to build branch lines in self-protection, without which the main line must become like the trunk of a tree—without roots or branches—in its relations to the greater portion of the territory naturally tributary to the Union Pacific.

Cheyenne and Northern.—This branch runs from Cheyenne in a northwesterly direction 125 miles, and is surveyed and cross-sectioned a considerable distance farther. The building of this road across the North-

western and Northern Pacific to the national line, with its branch running east of the Big Horn Range and another west, will greatly facilitate the requirements of traffic and travel and form a grand north and south trunk line. At Cheyenne the Cheyenne and Northern connects with the Denver Pacific, and that, with other connections, forms a southeasterly and northwesterly line, extending now from Texas and Mexico through Cheyenne to the North Platte River. When finished it will cross the entire width of the United States to the British Possessions, intersecting all the transcontinental lines running east and west.

The Cheyenne and Burlington.—The Cheyenne and Burlington Railroad, through the lines of the great corporation of which it forms a part (the C., B. and Q.), and by means of its connections with many other railroad organizations, is brought in direct communication with all the sources of transcontinental traffic east of the Missouri River. This line reached Cheyenne in December, 1887, by an extension of one of its Burlington and Missouri main lines from central Nebraska. Surveys have been made south from Cheyenne to connect with the Colorado system; west from Cheyenne, through the Elk Mountain coal-fields; also north from Cheyenne, along Horse Creek, to a point on the Broken Bow line of the Burlington system, and thence both roads join in a route to the Pacific coast, following the Laramie River, through the North Laramie cañon, into the Laramie plains. Another branch about 200 miles in length is now under construction, from Alliance, Nebr., a few miles east of the Wyoming boundary, into Crook County, Wyo., with a view of tapping the coal-fields in southern part of the county, and the rich resources of the Black Hills, and thence perhaps crossing over to the Yellowstone National Park. The iron rails on this branch have been laid for a distance of 126 miles. There is also contemplated an extension of the Utah, Denver and Pacific, which is now owned by the Burlington, both to Cheyenne and Laramie City, from the south. The Burlington interests have secured some of the most valuable coal lands in Wyoming north and west of Laramie, also in northeastern Wyoming.

Northwestern.—The western extension of the Fremont, Elkhorn and Missouri Railroad from Chadron, Nebr., in 1886-'87, into the central portion of Wyoming is known as the Wyoming Central, and is one of the main branches of the great Chicago and Northwestern Railroad system. This road enters Wyoming about 150 miles north of the Union Pacific Railway, and will traverse the entire length of central Wyoming, opening up a region possessing both agricultural and mining resources. The Wyoming Central has now reached Casper, Wyo., a point 130 miles west of the eastern Territorial line, and has about 300 miles to construct before making the junction with the Central Pacific, at Ogden, Utah. The completion of this road will make it one of the great transcontinental railroads of the country.

New railroads.—Under the general act of Congress the following roads have been granted the right of way in Wyoming:

The Sioux City and Ogden, through central Wyoming and northeastern Nebraska, passing through the towns of Douglas, Glenrock, Casper, and the Sweetwater Valley. Operations on its construction have already commenced at the Sioux City end of the line.

The Union Pacific and Western Colorado survey runs from the Union Pacific, at Fort Steele on the Platte River, in a southeasterly direction into Colorado. This road is graded for a distance of about 25 miles.

The Laramie, North Park and Pacific extends in a southwesterly direction from Laramie City for about 13 miles

The Wyoming and Midland is promised from Lander north, following the Big Horn River to the Northern Pacific. On one of its branches Congress has granted this road the right of way across the Wind River Reservation.

The Billings, Clark's Fork and Cook City Railroad has a survey from Billings, on the Northern Pacific Railroad, through the northwest corner of Wyoming Territory, the Yellowstone National Park, and connecting with the Wyoming Midland.

The Wyoming Southern, a branch of the Northern Pacific, promises a line from Montana via Sheridan, Buffalo, and Casper.

A line of railroad is also projected from Evanston, Wyo., a survey having been made, and the preliminary steps taken towards its construction.

Thus it will be seen Wyoming has nearly 1,000 miles of main line under the management of the three greatest railroad corporations of the world. With the prospect of having numerous branch roads the future agricultural, mineral, and industrial development of Wyoming is assured.

DEEP-WATER HARBOR.

The question of securing a deep-water harbor on the coast of Texas, as affecting the commercial, agricultural, mining, and stock-raising interests not only of Texas but of all the territory north and west of Texas, is of vital importance and has already attracted wide attention. The saving to this region by the construction of such a harbor is incalculable, and deserves the earnest consideration of Congress. The citizens of Wyoming take a deep interest in the subject and sent delegates to the Deep-Water Convention held at Denver, Colo., in 1888, and also at Topeka, Kans., in 1889. The Wyoming constitutional convention, lately assembled, framed the following preamble and resolution:

Whereas the Territory of Wyoming has great agricultural, mineral, and industrial interests that require for their development trunk lines of railroad running north and south, and extending from the province of British Columbia to the Gulf of Mexico, thereby opening to its farmers, miners, and artisans additional markets, and enabling them to compete with the States nearer the seaboard by exchanging the products of this section for the products of the South; and

Whereas these results must and will be naturally advanced by the establishment of a deep-water harbor in the Gulf of Mexico: Now, therefore, be it

Resolved, by the delegates of the constitutional convention of Wyoming, That the establishment of a deep-water harbor or harbors on the Texas coast of the Gulf of Mexico meets with the approval of the convention. That the president and secretary are hereby instructed to forward to the Deep-Water Convention at Topeka, Kans., a copy of these resolutions, and that they also furnish a copy to our Delegate in Congress, Hon. J. M. Carey, accompanying the same with the request that our Delegate use his best endeavors to secure the establishment of such a harbor or harbors.

TELEGRAPH.

Telegraph lines are constructed along all railroads, also along the principal traveled roads and stage lines. There are lines between Cheyenne, Fort Russell, and Fort Laramie, between Douglas, Buffalo, and Fort McKinney, and between Rawlins, Lander, and Fort Washakie; also south of Rawlins into Colorado.

TELEPHONES.

Towns of any considerable size are provided with telephone lines. At Cheyenne, the capital, there is a telephone exchange with 200 subscribers, and also an exchange at Laramie, the county seat of Albany

County, and both cities connected. Numerous towns are connected with telephones, and private lines connect many of the large stock ranches with each other and with town, and residences, offices, and business houses are connected with private lines where no exchanges are established.

MAIL ROUTES.

The attention of the Government has frequently been called to the lack of mail facilities in Wyoming Territory, and the necessity of providing better accommodations. There are many places where the mail is carried at the expense of individuals. The mail service does not keep up with the growth of population, and in many ways works a hardship to the pioneer. The settlements are scattered over an area of nearly 100,000 square miles, and the post-offices are necessarily widely separated. The mail service granted a new and growing country should in nowise be measured by its earnings. The receipts in Wyoming during 1888 were as follows:

The total receipts in Wyoming during the last year amounted to \$69,378.07. The receipts from the sale of postage-stamps, stamped envelopes, and postal-cards were \$62,378.97; from box rents, \$7,012.07; and from the sale of waste paper, \$1.25. There was paid to postmasters for compensation \$31,254.71, and for clerks in post-offices, fuel, and rent, \$3,041.61. The letter-carriers received \$1,569.65, and the railway postal clerks, \$477.25.

There are six Presidential post-offices in Wyoming, the aggregate receipts of which are \$36,744.80, and there were one hundred and seventy-three postmasters in the Territory, an increase of twenty-five during the year.

The total number of miles of mail routes was 2,490. Of this the star service takes 1,815 miles.

The decrease in length of star routes was 94 miles, and the increase of railroad service 133 miles.

AGRICULTURAL DEVELOPMENT.

Wyoming is rich in agricultural possibilities, and increased attention is being given farming in all its branches.

In the eastern and northern portions and in some other localities good crops are raised without irrigation, and the area over which this can be successfully done is doubtless widening, but irrigation wherever applied greatly assists, and over a large portion of the Territory is absolutely indispensable.

Surface.—The lands are generally slightly rolling, very accessible, easily broken to plow, and quite free from stones or other obstructions.

The soil.—In the valleys the soil is generally a black loam, in some places a red gypsum, and on the benches, plateaus, and slopes, a sandy loam, usually rich and warm. A great portion of the Territory which looks blank and barren is an alkali soil which produces abundantly after being reduced by the application of water, especially the sagebrush and greasewood wastes.

Climate.—Wherever the altitude is less than 7,500 feet the climate is sufficiently mild and warm to develop crops usually grown in the northern and Western States.

Crops.—Tame grasses, alfalfa, clover, wheat, oats, barley, rye, some corn, potatoes, roots generally, melons, and all garden vegetables, berries, small fruits, etc., are being successfully and very generally

grown; immense crops of hay are gathered, and broom-corn, sorghum, and standard apples of excellent growth and quality have been grown and exhibited at our Territorial and county fairs. The vegetables and grains shown at these fairs are unsurpassed in yield per acre or in size.

New agricultural districts are constantly being brought to public notice. One of the most complete and creditable exhibits displayed at our last Territorial fair came from Salt River Valley. The product was not only grown upon *public* land, but upon *unsurveyed* land.

Markets.—Wyoming should furnish within herself the best markets obtainable for all kinds of agricultural crops. Her mining and stock interests employ many thousand men, her cities and towns will continue to be constant consumers. Stock-raising and farming combined is very successful.

Irrigation.—In view of the facts that more than one-half of the people of the world reside where irrigation is essential in the production of agricultural crops; that 1 acre cultivated under irrigation yields as much as 3 to 5 acres in countries cultivated without irrigation; and that in some countries irrigation is resorted to as a source of fertilization where there is sufficient rain-fall and additional water not necessary, it is very plain we can not over-estimate the importance of this art or the value of water when used for purposes of irrigation.

The success which has attended irrigated farming in the arid region of the United States, and the growing importance of our agricultural interests, has attracted much attention. The extension of the irrigated territory, and the immense extent of country to be reclaimed by the practice of this art, makes it of importance not only to the arid regions, but to the whole nation that there be a wide dissemination of available information on this subject. To this end I submit a fuller discussion of our agricultural resources and their development than would otherwise be necessary.

The great results in individual size and in general yield of crops grown are always reached by the intelligent application of water. Irrigation is more reliable than rain-fall in the production of crops, as the farmer can regulate the moisture according to the necessities of each crop and the soil he wishes to treat. Oats raised in this manner weigh from 38 to 48 pounds to the bushel, where 32 pounds is regarded the regular standard without irrigation, and in other crops a similar result is given. Farmers who become accustomed to irrigation seldom return to farming in localities where irrigation is not practiced.

The water supplies are reliable, as they have their source high up the hills or mountains where living springs abound, and where in most cases the snows of winter are melted during the entire summer.

The water coming down from the mountains and higher plateaus is freighted with fertilizing materials derived from the decaying vegetation and soils of these upper regions, which are spread by the flowing of water over cultivated lands. Reservoirs can be made in the many natural depressions or basins by storing the surplus water during the year, so that small streams used in this way will irrigate large tracts of land.

Wyoming lies almost wholly within the limit of the arid belt and successful agriculture is largely dependent upon irrigation. This is not so much due to insufficient rain or snow-fall as to its unequal distribution. If the moisture of the atmosphere was precipitated uniformly over all the Territory it is possible that irrigation could be dispensed with, but such is not the case. The high mountains, owing to the cold atmosphere, act as great condensers, and clouds in passing

over them are robbed of much of their moisture, leaving but little for the plains below. An area equal to about one-third of the Territory is included in the lofty ranges which form the culmination of the watersheds of our streams.

There is an unfortunate lack of statistics of the annual amount of precipitation on this region but from the best available data the average precipitation equals a layer of water over the entire area from 2 to 3 feet in depth. The greater part of this falls as snow, which melts and passes off during the spring and summer months.

The lands adapted to agriculture vary in elevation from 3,000 to 7,500 feet. Between these elevations is situated nearly two-thirds of the Territory with an average rain-fall of nearly 12 inches. The range at Cheyenne for a period of seventeen years is about 14 inches, the minimum being 5.03 inches in 1876 and the maximum 19.24 inches in 1883. The greatest known rain-fall within the agricultural limits of the Territory is 31.42 inches at Fort Laramie, in 1853. This point has also the minimum record, 2.38 inches in 1860. The experiments of the Territorial engineer and the observation of our most experienced irrigators fixed the average depth of water which must be added to the rain-fall by irrigation, to secure the *greatest* yield, at 2 feet, this being equivalent to a duty of 1 cubic foot per second for 80 acres, reckoning the irrigating season at one hundred days.

We have, therefore, in this Territory the following conditions: There are over 20,000,000 acres of mountains on which water falls each year to a depth of 3 feet. There is an equal or greater area of land so situated along our streams as to be susceptible of irrigation and having the requisite smoothness and slope of surface to permit this to be readily accomplished. The problem of irrigation is to supplement the work of nature and distribute the water falling on the high mountains over these lands. It is not known how great a portion of the water falling on the mountains is lost through evaporation and sinking into under-ground channels, but two-thirds seems a liberal allowance for these losses, which leaves 20,000,000 acre-feet available for irrigation, and this on the duty before mentioned would suffice for the reclamation of over 10,000,000 acres. To reach this result, however, it will be necessary to store up water which now escapes during the winter months and during the early spring floods.

Wyoming differs from nearly all its neighbors of the arid region in the fact that its settlement and development is not the result of mining excitements and discoveries. The chief occupation of her people has been, and is yet, the care and management of the grazing and farming interests. To this fact is due the surprising agricultural development which has taken place within the past decade. Handicapped as the Territory has been by the lack of transportation facilities, the enormous expenditure involved in the construction of irrigation works would not have been met save through the proceeds of the cattle business and the necessity arising therefrom for a winter food-supply for the weaker stock.

As it now stands, Wyoming, although the youngest Territory in the Union, is third in the area of irrigated land and second in the number and mileage of its irrigation canals. A summary of the number, mileage, and capacity of the ditches of the Territory in the different water districts, and the area of land watered therefrom, is given below, being compiled from the records in the office of the Territorial engineer:

Statistics.

Number of streams from which water is diverted for irrigation.....	600
Number of water districts	10
Number of recorded ditches (there are believed to be unrecorded at least 500).....	2,613
Total length as stated.....miles..	4,508
Total number of claims where length is not stated	390
Total capacity as given.....cubic feet per second..	23,109
Number of ditch-claims no capacity given.....	505
Total acreage given as attempted to be watered.....	2,002,736
Number ditch-claims no acreage given.....	623

This table does not include the irrigation statistics of the fourth water district, which are not completed. As it stands, however, it shows an area of farming land greater than the average of the New England States, and an irrigated territory equal to one-half that of Italy and greater than that of France and Spain combined. It is an extraordinary record, when it is remembered that it is largely the work of the past ten years under unfavorable conditions; and it should forever put at rest any doubt as to the ultimate greatness and wealth of Wyoming. If the pioneers of this work can, unaided, produce such results, what may not be accomplished through the intervention of ample capital, or with State or national aid.

Expense of reclaiming land.—A short time previous to the late visit of the United States Senate Committee on Irrigation to Wyoming a circular letter, together with a series of questions to be answered, was sent from the Territorial engineer's office to farmers of known intelligence and practical experience in irrigation in different sections of the Territory asking their views on some of the questions involved in this investigation. The answers are from representative farmers living in every county in the Territory. The letter and questions, together with a synopsis of the replies, are given, as showing the results of actual experience in irrigation development and the views of unbiased and experienced men as to some of the questions on which legislation is proposed.

Name, _____; county, _____; post office, _____.

1. How long have you resided in the Territory? _____.
2. In what year did you begin farming? _____.
3. How much land have you under ditch? _____.
4. If obtained from the Government, state the filings which were made? _____.
5. How many acres are now under cultivation? _____.
6. By what ditch or ditches is it watered? _____.
7. From what stream or streams is water taken? _____.
8. Give history of construction of ditch:
 - (a) Names of owners, _____.
 - (b) Date begun and time occupied in building? _____.
 - (c) Dimensions, _____; length, miles _____; depth, _____; width, _____.
 - (d) How many acres does it water? _____.
 - (e) What was the cost of construction. _____.
 - (f) What is the cost per year for management and repairs? _____.
9. Do you buy or sell water; if so, state price paid or received? _____.
10. Have you all the water needed; if not, state the reason? _____.
11. What is the usual cost of bringing wild land under cultivation? This to include plowing, grubbing sage brush, fencing, etc. _____.
12. How many years' cultivation are required to bring wild land into proper condition for farming? _____.
13. What did it cost you to prove up and obtain title to your land, and what was the length of time required? If any difficulties were encountered, state what they were. _____.
14. What has your cultivated land cost you per acre? This is to include cost of proving up, cost of ditches and laterals, expense of preparing land for cultivation, fencing, and all permanent improvements. _____.
15. What is its present market value per acre? _____.

16. Can you raise crops without irrigation? If so, state what they are and yields obtained. —.

17. Do you think the present land laws are adapted to the conditions of this Territory? If not, what changes would you suggest? —.

18. What should be done with grazing land which can not be irrigated? What is its value per acre? —.

19. How do you regard the withdrawal of all public land from settlement during the irrigation survey? —.

20. Do you favor the donation of all irrigable public land to the Territory? —.

Respectfully,

ELWOOD MEAD.

NOTE.—Should the spaces left be insufficient to write reply, write on the accompanying sheet.

From the statements in answer to question 8 (e) the average cost of bringing water over the land was \$4.50 per acre, the highest cost reported being \$12.50 and the least \$1.50 per acre. This variation is due to the difference in the price of labor and material in different sections and to favorable natural conditions or the reverse. The average cost of this work is believed to be near the general average for all the work now completed. The building of larger canals to water greater areas would secure the same result at much less expense, and the tendency now is to construct works of this character.

The average cost of bringing wild land under cultivation, as stated in reply to question 11, was about \$10 per acre. Twenty-one replies, ranging from \$5 to \$10, four from \$10 to \$15, and three above \$15; two gave no estimates. This is exclusive of the cost of distributing works for water. Together they serve to illustrate the expenses incident to the reclamation of the arid domain under the methods and conditions heretofore prevailing.

Great wealth.—From these statements and the evidence of others well informed on this subject the expense of constructing ditches and distributing works in this Territory does not fall short of \$5 per acre, making the total investment in irrigation works in the Territory at the present time about \$10,000,000, upon which no taxes are assessed, demanded, or paid. The improvements on the land thus watered, together with the outlay made in bringing land into proper conditions for farming, must be nearly as great, so that the total expenditure at present in irrigation works and agricultural improvements is considerably in excess of \$15,000,000, the land itself being taxed only.

The cost of making proof of settlement or reclamation of land was variously stated from \$1 to \$5 per acre. Fourteen answers give from \$2 to \$5, and in two cases of contests it exceeded the latter sum. With the limited number of land offices the cost of making proof of the reclamation of desert lands has in many cases proven a serious and unlooked for expense to our pioneer farmers, and when this was followed up by the arbitrary withholding of patents that deprived the settler of any security on which to borrow money the evil was aggravated. A number of those making replies are yet denied title, although they have lived on their lands for from five to eleven years.

All replies agree in stating that irrigation is necessary to secure the largest yields in agriculture, and all are agreed in commending the operation of the desert land law, a number adding the statement that reclaiming the land should of itself entitle the settler to possession without the additional payment of money. Opinions as to the proper disposal of grazing lands vary, the majority favoring such action as will enable it to be used in connection with the farming lands along the streams. All favor the donation of the agricultural lands to the State,

if the State will secure reclamation, for the reason that experience has shown the desirability of having both the land and the water under one control if we are to have the fullest utilization of our water supply.

In another part of this report will be found an interesting paper written by Mr. Elwood Mead, Territorial engineer, and presented to the United States Senate Committee on Irrigation.

STORAGE RESERVOIRS.

The action of the national Government in making an appropriation for the examination and survey of reservoir sites has inaugurated a work not only of great value to this section but to the country at large. Of corresponding interest and importance has been the investigation of the United States Senate Committee on Irrigation. From the labors and report of this committee and of the officials of the irrigation survey there will undoubtedly come much new and valuable data as to the methods of irrigation and a wide dissemination of information concerning the resources and possibilities of this section.

It is to be hoped that it will result in such early action by Congress as shall secure the full utilization of the waters of our streams and the retention and use of the waters which now run to waste during the winter months and during the early summer floods. While private enterprise will undoubtedly carry out the work necessary to the full utilization of the average summer flow of our streams, the work of constructing an extensive system of storage basins for holding back the flood waters and the water escaping during the non-irrigating season is an undertaking of great difficulty and involves an outlay which will, except in a few favored localities, prevent the work being undertaken by private business enterprise.

There are sites for such storage basins on nearly every stream and their improvement would result in a very great extension of the cultivated area over what would otherwise be possible. The carrying out of this work on the tributaries of the Mississippi will also be an important aid in preventing the disastrous floods which now menace the country along its banks. The chief beneficiary of this work, therefore, is the State and nation. Since it will bring about an immense increase in its wealth and productive capacity and a perpetual addition to the revenues derived therefrom by taxation, I believe the advantages which will result to the national Government from this undertaking will justify any expenditure it may make in the construction of works, and that the extending of such aid as will result in the fullest utilization of our water supply is the only sound public policy.

TERRITORIAL FAIR.

The Wyoming Territorial fair is annually held in September on the grounds of the Fair Association near Cheyenne. The exhibits are very creditable, especially in live-stock and agricultural products. A score or more of entries are made in nearly all the classes and for each age upon which premiums are offered for horses, cattle, sheep, etc. Fruits, vegetables, grains, and flowers, of wonderful growth and excellent quality, are here shown, disproving entirely the old-time and oft-repeated assertion that this Territory is in the Great American Desert described in the geographies of thirty years ago.

LIVE-STOCK.

The greater portion of Wyoming is admirably adapted to the live-stock industry. Nutritious grasses that cure standing on the ground furnish good grazing both in winter and summer. The great grain-growing States of Nebraska and Kansas are directly on the route of shipment to market, so that live-stock bred and reared on the ranges can be fattened and finished in the cheapest grain country in the world while en route to points of sale.

The Territory employs a competent veterinarian to prevent the spread of contagious diseases among cattle, sheep, and horses, but with the exception of glanders, which is easily stamped out, fatal contagious diseases do not exist. Laws are rigidly enforced for the prevention and extinguishment of disease and to generally protect this great industry.

Previous to 1870 the live-stock industry was of little consequence in Wyoming, and included work stock, milch cows, with perhaps a few bunches of cattle and sheep held by the meat markets for daily slaughter. It was then believed by stockmen, who grazed their herds on the plains south of Wyoming, that the winters were too severe to admit of safely grazing cattle, horses, and sheep on the open range during the entire year, and the occupancy of the large portion of the Territory by Indians at the time deterred the experiment of stock raising.

Cattle.—In 1870 and 1871 several lots of cattle were brought north from Colorado and Texas. It was found that they wintered well, and the succeeding year witnessed the driving in of very large herds from the south and southwest. The Indians having retired, the full possibilities of grazing live-stock in the Territory commenced to dawn upon the herdsmen.

Disease was unknown, the grass grew abundantly, cured excellently, and carried through the winter all classes of live-stock without having to furnish any considerable amount of hay or grain. The transcontinental railway afforded quick transportation eastward, and the freight rates were low compared with the tariff charged on other commodities. As the business grew immense profits were realized; capital came in from all parts of the East and the Old World, and the statement that all a man required in Wyoming to become rich was to own cattle was rarely disputed. The Wyoming Stock Growers' Association, a protective organization, was formed, and the general success of the business was most remarkable. Prices for cattle products rose very rapidly at the Eastern markets for several years, and it became an accepted theory that the population of this country was increasing much faster than horned cattle. The rise in prices of live-stock was maintained, and their numbers increased in Wyoming for more than ten years after the first herds were driven here. Immense numbers of cattle were brought in, breeding herds established, good blood introduced, the animals improved, and, indeed, to many there seemed to be no limit to the success and prosperity of the business.

In 1884 and 1885 there was believed to be 2,000,000 head of cattle in Wyoming, worth, on an average, \$30 per head. The business was still very profitable, but the prices for beef in the Eastern market showed severe decline—a decline that has continued with slight variation until the present. Although the grade of cattle has greatly improved, the price per head has depreciated from 25 to 50 per cent. During the early period mentioned the prevailing transactions of stock cattle were made on book tally without delivery and immense herds were built up, the tendency being towards concentration—fewer herds of larger size and

a general looseness in the conducting of the business. This condition, with occasional severe winters, resulted in great losses to those who invested recklessly or were unfortunately located, and many cattle companies, built upon inflated values and uncertain numbers, collapsed.

I quote the following from my report of 1885:

The business of cattle raising in this Territory can scarcely be longer regarded as in its infancy, nor can the business be called experimental or speculative as to its generalities.

The rearing of cattle in the Territory is to-day as profitable as it ever was, but it has lost much of that speculative "sell and buy without tally, anything and any price to get into the business" buoyancy that has characterized it.

The prices of stock cattle have advanced to a figure where investors, while willing to pay current rates, want to know to a certainty that they are getting what they pay for, as to numbers, grade, and condition of cattle. There is also a growing conviction that this business will not longer "run itself," and that owners must give it, at least, some small percentage of the attention necessary to accomplish success in other industries, and there is also a prevailing disposition to better provide against emergencies, such as the putting up of hay for the weaker ones, the providing of shelter for thoroughbred and fine stock, the separation of bulls from the herd, and special care given them during the winter, etc.

Perhaps the greatest reform is the determination on the part of owners to discontinue the pernicious practice of shipping to market unripe beeves, but, instead, to ship only those of proper age and that are really fat, leaving the younger ones to grow longer on the range, and taking the older ones that are yet lean to the corn-fields of the Missouri Valley for fattening.

Many of our large stock growers have already provided themselves with Eastern feeding grounds and have constructed suitable structures for fattening their beef.

To give an idea of the increase and volume of the Wyoming cattle business, it may be stated that the Union Pacific delivered at Omaha 48,220 head of beef cattle in 1876, increased the number to 121,554 in 1883, and 166,000 in 1884. Since the period above mentioned cattle business in the Territory has changed quite a little. There are more herds, but of smaller size, and greater care is taken to provide shelter and feed for the weaker ones during the occasional storms of winter. The business, so far as the natural increase, healthfulness of stock, favorable winters, good ranges, etc., are concerned, is still very successful, but the extremely low markets prevailing the past two years for cattle products have been a discouraging feature.

While it is claimed the total number of head of cattle in the Territory has diminished, the following figures will give some idea of the magnitude of the business at present:

During the fall of 1888 and the spring of 1889, including the shipments of cattle for one year, there were inspected: Cattle en route to market at the several stock-yards, 343,054 head of Wyoming cattle, with the exception of about 20 per cent. of those inspected at the one point, St. Paul, which were from Montana and Dakota ranges. As but 102,000 were inspected at St. Paul, this would still leave the number of Wyoming cattle inspected during that time upwards of 300,000 head.

Good profits can be made in the cattle business of to-day, if properly conducted; and an encouraging feature of the business is that stockmen are adopting better modes of management. A reasonable increase in price of the cattle product, which is most sure to come soon, will make cattle raising in Wyoming one of the most lucrative industries known anywhere under the head of legitimate pursuits.

The settlement of farmers and grangers upon agricultural lands has caused a division in the area of open country, but there yet remains a wide field for the business, conducted in the open-range way, on the very large tracts that can be used for grazing only, for many years. The lands taken by settlers are being improved by irrigation, tilling,

and fencing, so that the portion withdrawn from the public range will support more live-stock than before.

While the contraction of the open ranges and the decrease in animals handled in the old way has necessarily lessened the cattle industry in Wyoming the last few years, yet it is believed that ultimately stock farming, or the combining of agriculture and stock raising, crops being raised on the streams and arable lands, and live-stock ranging outside on mountain-sides and on the near ranges, will greatly increase the total number of cattle; also the grade, weight, quality, and profits in the Territory until there will be more cattle raised in Wyoming than at any time in the past, the total amount of grass, hay, and grain-growing having largely increased.

Reports issued by the Department of Agriculture in Washington report the number of cattle in Wyoming to be: Milch cows, 8,323, average price, \$36.75 per head; number of oxen and other cattle, 1,107,173, average price, \$19.59. It is my opinion the total number of cattle in Wyoming now will reach 1,500,000 head, the average price being, during the present great depression, about the same as quoted by the Agricultural Department.

The present is a favorable time to invest in the cattle business in Wyoming Territory.

Sheep.—There are probably more than 1,250,000 sheep in Wyoming. The business was later in getting a start than cattle-raising, but is now far beyond the experimental stages, and established on a permanent and paying basis. The low price for wool during the tariff agitation has been discouraging, but confidence is returning with the friendly attitude of woolen manufactories and Congress regarding protective tariff, and there is a steady and growing market for mutton which is doing much for the future development of this industry.

Sheep-husbandry in this Territory requires care and watchfulness to prevent loss from storms, disease, and accident; but with care all conditions are favorable. The only contagious disease is scab, and this is easily cured. The laws of Wyoming provide for county sheep-inspectors to prevent the spread of disease. Foot-rot is unknown, the dryness of the soil acting as a preventive, and will speedily cure without the application of remedies when Eastern sheep are brought here affected with it.

Sheep graze the year round, but when an occasional snow-fall is deep enough to prevent their reaching the ground it is necessary to feed hay. On an average during the past ten years not more than fifteen days of each year has it been necessary to feed hay or grain to strong, healthy sheep. The weaker animals require more nourishment, but in many instances they have done well without hay or other feed than that found on the open range, for several years in succession.

Nearly all the grazing lands in Wyoming are adapted to sheep-growing. The sheep now raised are of good grade and will yield an average per head throughout the flocks of 6 to 8 pounds of wool.

Goats.—There are perhaps 5,000 Angora goats and 1,000 or more common goats in Wyoming. The altitude being about the same as Asia Minor—the home of the Angora—this animal thrives well in the Territory. The mohair fleece brings a higher price per pound than wool, but the animals do not shear so heavily.

Mules.—There seems no good reason why mules should not be extensively bred and raised in Wyoming. The few persons who have engaged in this business have been quite successful.

Swine.—Hogs are raised only for home consumption, but not in suffi-

cient quantities to supply the demand. This branch of stock-raising deserves more attention and will be found to yield good profits.

Horses.—The raising of horses in Wyoming is becoming a very profitable industry, and it is safe to estimate the number in the Territory at 150,000. No class of live stock is as hardy or as free from disease, and the percentage of loss is only nominal. When the snow is deepest horses will paw their way through it until the grass is reached; and in cases where the water is scarce and the distance many miles between streams, they find no difficulty in trotting out far enough from water to obtain fresh range. The pasturage furnishes all the necessary food for growing horses, and as they are able to graze closer to the ground than other live stock, an abundance of food is always assured.

The number of horses in Wyoming is steadily increasing, and the quality being improved by careful breeding. Thoroughbred and standard-bred stallions, many of them imported, are being brought to the Territory in large numbers for breeding purposes. Wyoming race-horses have won laurels the past two years at home and abroad. Draft and driving horses are establishing excellent records in eastern cities, and the time is not far distant when Wyoming horses will be as famous as those of Kentucky, even surpassing them in lung development, sound feet, and power of endurance.

I cheerfully indorse the following, written by Mr. A. S. Mercer, of the *Northwestern Live Stock Journal*, a man thoroughly informed on the subject:

This section is the natural home of the horse and here he is developed in a more perfect and uniform manner than anywhere else on the continent. The altitude and consequent rarity of the air develops a large and healthy lung; the dryness of the atmosphere protects against sudden changes of the thermometer; the sandy, dry, and hard character of the soil gives a foot (a hoof) as hard and durable as iron; the rolling and hilly character of the range over which the horses travel in search of food develops large and hard muscles, and the great healthfulness of the climate gives the best of constitutions. In a word, the nature of the soil and the climatic conditions give wonderful lung capacity, sound feet and legs, with endurance and high courage. And these make the horse. Seventy-five to 90 miles are common drives for double teams in a day over our trackless prairies, with the common ranch horses. What we may reasonably expect from the young crop of improved animals now coming on is so far in advance of our past experience that we hardly dare to name it.

It is safe to say that the time is not far distant when the horses of Wyoming will be as widely known and as generally appreciated as are the record-beaters of California and Kentucky of to-day. To the lover of the horse who contemplates entering into the business of raising good ones there is no other spot in all the broad land offering greater inducements than our Territory. The wonderfully nutritive qualities of our native grasses give a development elsewhere only secured by the feeding of the best varieties of grains. All the conditions are favorable in the highest degree to the most perfect development of the horse.

Long observation has shown beyond any question of doubt that different types of animals are produced by the continued operation of climatic influences. It is well known, for instance, that in low-lying countries, where the soil is wet, the atmosphere heavy with moisture, and the growth of vegetation is rapid, coarse, and rank, animals are produced of large frame, with loose, soft, flabby muscles, poor, flat feet and of weak lung-power. On the other hand, the opposite climatic conditions combine to produce a type of animals exactly the opposite of that just described, *i. e.*, one of compact build, with fine, clean bones, muscles of iron, great lung power, and constitutions that withstand the greatest strain of every day wear and tear.

During the past year Wyoming horses have been shipped to many of the Southern States for breeding purposes.

FISH CULTURE.

While most of the streams and lakes of Wyoming had a natural supply of trout and other food-fish, there were others entirely devoid of fish of any description, and the success attending the stocking of streams containing native fish as well as the barren waters of the Territory has been very gratifying. Under the fostering care of the legislature the fish hatchery at Laramie has been enabled to accomplish the most satisfactory results. The Territory is under obligation to the United States Fish Commission for frequent donation, of valuable varieties of fish. Over a half million fish have been annually distributed in the streams of Wyoming for a number of years, and many streams that were barren have been stocked and found well adapted to the raising of trout and other superior fish. Trout planted in 1885 have been caught the present year that weighed from 3 to 4 pounds, and measuring 20 inches in length each.

The fish hatchery under the direction of the commissioner made a large and very interesting exhibit at the Territorial fair this season of fish grown in Wyoming streams that had been planted from the hatchery. The operations of the commissioner have been considerably curtailed on account of the withholding of Territorial appropriations for improvements that would double the capacity of the hatchery. The hatchery is on what is known as the abandoned Fort Sanders military reservation, 2 miles south of Laramie, and until title can be obtained to this land the Territory is unwilling to make further appropriations. Under the head of military reservations will be found a recommendation urging the opening of this reservation to settlement or sale.

MINING.

The mining industries of Wyoming present perhaps the greatest possibilities of any of its resources. They comprise not only the precious metals, gold and silver, but inexhaustible quantities of coal, petroleum, iron, and soda. Copper, lead, tin, asbestos, mica, magnesium, sulphur, graphite, kaolin, fire-clay, glass sand, and other valuable deposits exist, and many of them in large deposits. Building-stone is also abundant, including granite, marble, slate, sandstone, limestone, etc. There will be found attached to this report (in Part II) extracts from an interesting and valuable report by Mr. L. D. Ricketts, Territorial geologist, in which the mineral resources of Wyoming are more fully described. Mr. Ricketts has spent the summer in the field, and gives the result of his examination in certain localities. It is shown that the area underlaid with coal exceeds 30,000 square miles, or equal to double the coal area of the great coal State of Pennsylvania. More than 2,000,000 tons of coal are annually mined and the output is being constantly increased. The coal product already exceeds \$5,000,000 annually.

The oil region extends over a country more than 300 miles in length, and in districts averaging 50 by 100 miles in extent. Two hundred thousand dollars are said to have been spent within the past year in developing the petroleum industry. A number of flowing wells have been plugged and only await better transportation facilities.

Gold quartz and placer mines are being profitably worked in several localities, and the mining of copper has also been found profitable; but, with the exception of coal, the mining industries can hardly be said to be developed. Wyoming is a great store-house of mineral wealth, and it will not be many years before it will employ the highest skill of capital and labor. More railroads are needed to assist this development.

FORESTS AND THE PRODUCTION OF LUMBER.

The United States laws prohibiting the manufacture of lumber from forests on the public domain, except for the use of actual settlers, are not calculated to promote the growth of this important branch of industry. It is no doubt a fact that the protection afforded by mill-owners to forests from destruction by fire is greater than the amount of timber which they annually consume in manufacturing lumber. Legislation providing for the leasing of timber lands under certain restrictions would, in my opinion, provide a remedy for many of the existing evils that are now complained of.

Fire is the great destroyer of the forests, and the timber cut and used for all purposes does not perhaps reach 5 per cent. of the total amount consumed by forest fires. The use of timber by settlers, mill-men, and others under proper regulations would in a great measure prevent the spread of the fires which every year devastate such vast areas.

The following is from a report on Wyoming by Mr. Robert C. Morris, compiled for the United States internal commerce report for 1889 :

The timber area of Wyoming has been variously estimated from 7,000,000 to 15,000,000 acres, a variation probably owing to the fact that the sparsely-timbered land has been included in the larger estimate. A recent estimate of the forest area of Wyoming, based upon 12,060 square miles, divides as follows:

Counties.	Square miles.	Counties.	Square miles.
Laramie	80	Fremont	3,300
Albany	840	Crook	400
Carbon	1,360	Uinta	2,400
Sweetwater	40	Yellowstone National Park	1,340
Johnson	1,800		

The forests of Wyoming are confined mainly to the mountain ranges between 4,500 and 10,000 feet above the sea level. Some of them are of wide extent, and the timber quite dense and heavy. The best timber is found in the southern part of the Big Horn Mountains, the central portion of the Laramie range, Medicine Bow and Sierra Madre Mountains, and the northern spurs of the Uintah, which extend from Utah into southern Wyoming. The Shoshone, Teton, and Snake River ranges also bear quite heavy forests. The timber upon the eastern extension of the Sweetwater range and western portion of the Rattlesnake Mountains is light and scattered. The widest timbered area is in the northwestern part of the Territory, covering the Wind River, Shoshone, and other mountains of the main range, including the groups of Yellowstone Park.

There is considerable timber, mostly yellow pine, upon the Black Hills near the Dakota line. Measurements of the timber limits of various mountains have been made, which show the heights in their respective altitudes, above which coniferous trees--the hardiest of any species--will not grow. The timber line of Mount Washburn is 9,900 feet above sea level, while the altitude of that mountain is 10,388; the timber line of Mount Hayden, of the Teton range, is 11,000 feet, while its altitude is 13,858 feet above the sea level; the timber line of the Wood River range is 10,160, while its general altitude is 11,500 feet above the sea.

Yellow and white pine and white spruce are the principal timber. Many regard the yellow pine as the best and most useful tree, while others think the white spruce furnishes the best timber for all purposes. Lodge pole pine is the prevailing forest tree in a wide area along the mountain range north and south of Laramie. It is also common in the northwestern and other portions of the Territory. It often replaces the original growth after fires. These trees have an average growth from 8 to 12 inches in diameter, but are occasionally found 3 to 4 feet in diameter and 60 to 100 feet in height. Red cedar has a scattering growth along the foot-hills, and at lower elevation the streams are fringed with cottonwood, box-elder, willow, scrub oak, and other small shrubbery.

The forest land of the Rocky Mountains is still largely owned by the General Government, and its preservation is of vital importance. The principal demands upon the

forests are for the manufacture of lumber for local use and for railroad-ties. Also large quantities of smaller timber are used for fencing and fuel. But little if any timber is exported. The consumption of railroad ties has been estimated at 500,000 per annum, and an equal amount is used for timbering the coal mines. The manufacture of charcoal in Uintah County was an important industry for use in the smelters of Utah and Montana until the discovery of coking coal in Colorado on the line of the Rio Grande Railroad several years ago. The native lumber is similar to the Eastern spruce lumber, and is suitable for all ordinary purposes in building except as a finishing lumber. It has too many knots to work smoothly, and the preference is therefore given to Oregon or Eastern lumber. It is estimated that between 30 and 40 per cent. of all lumber used along the line of railroad is imported, and is worth, planed, from \$40 to \$60 per thousand. The native rough lumber is worth from \$15 to \$30 per thousand, according to location. The average price along the railroad is about \$20. In Johnson County, in 1887, there were 9 saw-mills, 3 operating by water-power and 6 by steam, having an average daily capacity of 6,500 feet. The product of those mills in 1887 was 4,856,378 of first-class lumber and 2,381,235 of second-class lumber, 1,994,275 shingles, and 270,810 laths, all of which were used for home consumption. At Buffalo, Johnson County, rough lumber per thousand is worth \$25, dressed flooring per thousand \$35, shingles \$5.50, and laths \$8 per thousand. In Uintah County the product of the saw-mills in 1888 was over 4,000,000 feet of lumber, on an average \$20 per thousand, and 200,000 ties worth \$30,000. Albany County produced an equal amount in 1888, while Crook, Fremont, and Converse Counties produced sufficient to meet all the demands for home consumption.

Little attention has been paid to the cultivation of timber except the native cotton-woods on timber claims; but in all the larger towns experiment has shown, at altitudes not exceeding 6,000 feet, all the hardier varieties of timber raised in the prairie States of Kansas and Nebraska can be successfully cultivated in Wyoming. At Cheyenne, which has an elevation of 6,040 feet, its citizens have been successful in raising, besides the native cotton-woods and box-elder, black walnut, maples, ashes, elms, locusts, apples, and all the hardy varieties of shrubbery. The experience of old residents in Nebraska is being repeated in both Colorado and Wyoming. In 1854, '55 and '56, the first settlers of Nebraska thought that the naked plains could never be transformed into groves of valuable timber. They discovered, however, that on bottom lands along streams, and where prairie fires were kept out, there was a spontaneous growth of valuable varieties of timber—oak, black walnut, elms, ashes, cotton-woods, willows, etc. Still latter it was found by experience that native seedlings transplanted into carefully prepared soil did well on high uplands, out on the open prairie, not only did well, but grew with remarkable vigor and rapidity, showing characteristics of excellence in quality. In time, through acts of the legislature, creating a board of agriculture, and liberal legislative appropriations, keeping out fires, and other aids and precautions, tree planting in Nebraska is conceded a success.

It is estimated that in 1886, there were cut in Wyoming 8,000,000 feet of timber, outside of railroad and mine timber. With the exception of forest fires, it is conceded that no one agency consumes the forest so rapidly as do the railways.

It is important that Congress set aside large forest reservations for the protection of the fountain heads of the great rivers, and the withdrawal from sale, entry, and disposal under existing laws of such lands. The enactment of laws for the protection of forests, and the planting and cultivation of forest trees should be encouraged in the several Territories. When any Territory shall become a State, and shall have instituted good and sufficient forest laws there should be conveyed to such State, in trust, the public forest lands within its borders for the perpetuation of the forests thereon.

EDUCATION.

The United States census of 1880 reports less illiteracy in Wyoming than in any other State or Territory in the Union. Compulsory education is enforced in Wyoming, and a high standard in the management of the public schools has been maintained. The Territory has a general superintendent of public instruction appointed by the governor, and the counties elect biennially a county superintendent. The trustees of each school district are elected annually in the spring for a term of three years by the vote of the poll-tax payers, including women who pay a poll-tax. The term of office of one or more trustees annually expires, so that there are always men of experience on the school board as well as newcomers.

There were 256 teachers employed in Wyoming, exclusive of those

employed in the university, convent, church, and private schools, during the past year, at an average monthly salary of \$58.71. The increase in number of scholars in the public schools in 1888 over 1887 was 1,260, and in the private and other schools there was doubtless a proportionate increase. The Wyoming University at Laramie offers free the benefits of higher education to its students, and good graded schools are supported in all the larger towns and cities. The public schools are gradually assuming a more practical uniformity, with a view of having students prepared to enter the university or other institutions of higher learning. The Catholic Church have under their auspices good schools in several of the larger towns, besides a large convent at Cheyenne. They are doing excellent missionary work among the Indians in Fremont County. The total amount expended in the erection of educational institutions, including the public schools, university, private, and Catholic school buildings, has already reached about \$1,000,000.

SCHOOL LANDS.

Under the United States statutes, sections 16 and 36 of each township are reserved from the public domain for the benefit of the public schools. A subsequent act, approved August 9, 1888, authorizes the Territory to lease the school lands in each county for the building of school-houses and the support of public schools; also the leasing of the university lands for the benefit of the Wyoming University, under rules and regulations approved by the Secretary of the Interior. The Territory has already taken the benefit of this law to some extent, and its school lands are being offered under the following:

RULES AND REGULATIONS FOR THE LEASING OF SCHOOL LANDS IN THE TERRITORY OF WYOMING.

Rule first.—All leases to be until January 1, 1891, no matter at what time the lease is made.

Rule second.—Leases will be divided into two classes, namely, agricultural and grazing, and grazing.

Rule third.—The value of lands to be leased shall be ascertained as set forth in the following blank form of application for lease:

Territory of Wyoming, _____ County.

Post-office of applicant _____.

Date _____, 188 .

To the Honorable Board of County Commissioners of _____ County:

GENTLEMEN: I desire to lease the land described in this application, and I agree to pay the sum of 5 per centum of the value established by the board as annual rental, in advance.

No. of acres.	Subdivision of section.	Section.	Township.	Range.	Price per acre	Value of improvements.	Name of occupant or owner of improvements.

Applicant will answer briefly the following questions, and the answers will be considered a part of the application.

For what purpose is the land wanted?

Is any person living on the land?

If so, who and how long?

Are there improvements of any description on the land? If so, give name of owner and description of improvements.

State value of same on each Government 40-acre tract, and describe them.

Is there any timber on the land; if so, what kind and quality?

If it can be irrigated, state source and conditions.

If so, how many acres, and on what Government 40-acre tract situated?

Does it contain stock water? If so, give a full description of the same.

Is any portion of it natural hay land?

If so, how many acres, and on what Government 40 acre tract situated?

Describe the general character of the land, locate buildings, fences, and other improvements, with tracings of streams, springs, etc., on section diagram.

If the information given herein shall not be satisfactory to the board of county commissioners, they shall have the right to appoint a board of appraisers, or in any other manner, to ascertain the true value of the land, the expenses accompanying such ascertainment of the true value to be paid by the applicant, who must deposit with the board of county commissioners, with this application, the sum of \$20 to cover such expenses. But in case the information shall be deemed sufficient, then the \$20 shall be refunded, if the applicant shall perfect the lease within thirty days after notice of acceptance of application; but a failure to perfect the lease within the thirty days shall work a forfeiture of the \$20 to the school fund of the county.

Name of applicant _____.

I, _____, do solemnly swear, or affirm, that the answers to questions in foregoing application are true to the best of my knowledge and belief; so help me God.

Subscribed and sworn before me this _____ day of _____, A. D. 188-.

Notary Public.

Rule fourth.—The rental value shall be 5 per centum of the ascertained and appraised value of the lands.

Rule fifth.—The resident or occupant possessing or controlling, in any way, the land to have the preference right to lease at the rental value, which shall be established.

Rule sixth.—In cases where more than one person are settled or living on the section each shall have the preference right to the quarter section subdivision, more or less, on which he is residing prior to January 1, 1889.

Rule seventh.—In cases where legal subdivision lines could not apply in determining prior rights of settlers on any section, or in all cases of conflicting interests on the same, it shall be the duty of the board of county commissioners to act as a board, or appoint three persons, who shall be absolutely disinterested, to act as a board, to settle and define the rights and interests of all the settlers who may desire to lease. The board may require the services of the county surveyor in all such cases, and the decisions of the boards of arbitrators shall be final after filing the proceedings in the office of the county clerk.

Rule eighth.—In case the occupant, resident, or person controlling the land fails, refuses, or neglects to lease, according to the rental value established, then such land shall be placed on the same level with those lands unoccupied or unclaimed by possessory right.

Rule ninth.—Parties claiming possessory rights who fail, neglect, or refuse to lease at the rental value established shall have sixty days to move away and to remove their improvements, consisting of houses, barns, fences, etc.; but all water rights of every description, consisting of dams, reservoirs, ditches, flumes, etc., shall not be disturbed, removed, destroyed, or in any way impaired in value. And in case such person, claiming possessory rights, shall neither lease nor vacate the premises, and give up the land open, free, and untrammelled, but shall continue to use and utilize the same, either directly or indirectly, it shall be the duty of the county board of commissioners to immediately take the proper legal steps to have said party or parties removed from the lands, and compel them to pay the established rental value, with all expenses accruing by reason of such suits, such rental value to be collected for a whole year and not for any fraction of that period—such rental value and expenses to be a lien upon the houses, barns, fences, etc.

Rule tenth.—In case there shall be more than one applicant for the leasing of any of the lands at the established rental value, then the lands shall be subject to lease to the highest bidder, upon due notice by letter to the parties in interest that such public leasing shall take place on the first Tuesday of the succeeding month, at 12 o'clock noon, at the office of the board of commissioners; provided, that notice must be given the parties in interest at least twenty days prior to the public leasing.

Rule eleventh.—It shall be the duty of the respective boards of county commissioners, upon receipt of the rules and regulations for their government in the leasing of the school lands, to immediately advertise in one or more weekly county papers, once each week for four consecutive weeks, that all the school lands in their respective counties will be leased by them upon application; and the board will furnish all nec-

essary blanks. All applications must be filed with the county board on or before 12 o'clock, noon, on the first Tuesday in each month, and be by the board considered and acted upon as soon as the rental value shall have been determined and established, which should be without unnecessary delay thereafter.

Rule twelfth.—It shall be the duty of the respective boards of county commissioners to cause to be printed immediately the rules and regulations governing the leasing of the school lands, and immediately have such rules and regulations conspicuously posted up in at least three prominent places in the court-house; and also to furnish the respective school boards of each school district with at least three copies of such rules and regulations, to be posted up in at least three prominent places in each school district.

Rule thirteenth.—In case any person claiming possessory rights over any school lands shall fail, refuse, or neglect to lease the lands at the established rental value, he shall have the right to sell his improvements to the person leasing such lands within the sixty days given for removing such property. But in case such person, claiming possessory rights, shall neither remove his property nor sell to the party leasing them, it shall be the duty of the board of county commissioners to proceed by law to dispossess said party and collect the annual rental with damages and expenses, such rental value, damages, and expenses to become a lien on the houses, barns, fences, etc., on the lands.

The revenue received from this source will be of great assistance in maintaining the high standard of education already established.

The act of Congress passed August 9, 1888, provides also—

That where lands in the sixteenth and thirty-sixth sections in the Territory of Wyoming are found upon survey to be in the occupancy and covered by the improvements of an actual pre-emption or homestead settler, or where either of them are fractional in quantity, in whole or in part, or wanting because the townships are fractional, or have been, or shall hereafter be, reserved for public purposes, or found to be mineral in character, other lands may be selected by an agent appointed by the governor of the Territory in lieu thereof from the surveyed public lands within the Territory not otherwise legally claimed or appropriated at the time of selection, in accordance with the principles of adjustment prescribed by section twenty-two hundred and seventy-six of the Revised Statutes of the United States, and upon a determination by the Interior Department that a portion of the smallest legal subdivision in a section numbered sixteen or thirty-six in Wyoming is mineral land, such smallest legal subdivision shall be excepted from the reservation for schools, and indemnity allowed for it in its entirety, and such subdivisions, or the portions of them remaining after segregation of the mineral lands or claims, shall be treated as other public lands of the United States.

The Territory has received no benefit as yet from this provision of the act, there being no funds available for the expense of selecting the lands. The Government has received the benefit of the school lands withheld and withdrawn from the Territory on account of their mineral character, settlement by pre-emption, etc., and since Congress has never aided the public schools of Wyoming by any appropriations, I recommend that a sum sufficient to cover all expenses connected with the selection of these lands be appropriated by the next Congress.

University lands.—The act of 1881 grants to certain Territories, including Wyoming, seventy-two sections each of the public lands for the use and support of a university when such Territories shall be admitted as States. The legislature, at its session in 1886, provided for the appointment of a commissioner, and appropriated money for the necessary expense of making a selection under the law. The lands were designated during 1887 and 1888, and the selection duly certified to the General Land Office. Rules and regulations similar to those adopted by the counties for the renting of school lands and approved by the Secretary of the Interior were adopted by the board of trustees of the university.

Numerous applications to rent certain portions of the university lands have been received, but owing to the delay in the General Land Office at Washington to approve the selections made by the commissioners the land can not be rented. A telegram relating to this matter was sent to the Department on the 5th of July last, and on the 17th of

September I addressed a letter on the same subject. No reply has been received, and I presume the matter is under investigation. I trust, however, that it will receive early attention so that the university may profit by the rental of these lands.

LABOR SUPPLY.

The conditions regulating the demand and supply of labor in Wyoming at the present time are about normal. There is, however, a more than usual demand for skilled mechanics and female house-servants.

The total number of Chinese employed in the Territory (largely in the coal mines) will not exceed 500, but they are gradually diminishing each year.

The question of the cost of living and maintaining a family in the Territory as compared with the States east of the Missouri is one frequently asked and worthy of consideration.

Wages are probably 35 to 50 per cent. higher here than in the Middle States, while the cost of living in towns and cities on the railroad is 10 to 20 per cent. greater; in the outlying towns probably 20 to 35 per cent. greater.

I submit herewith a list of approximate current wages in Wyoming.

Occupations.	Wages.	Occupations.	Wages.
Carpenters..... per day..	\$2.50 to \$4.00	Horse wranglers (with board),	
Machinists.....do.....	3.00 5.00	per month.....	\$20.00 to \$40.00
Painters.....do.....	2.50 3.50	Farm hands (with board), per	
Tinners.....do.....	3.00 3.50	month.....	20.00 35.00
Stone-cutters.....do.....	3.00 6.00	Sheep herders (with board),	
Plasterers.....do.....	2.75 4.00	per month.....	20.00 35.00
Roustabouts.....do.....	1.50 2.00	Teamsters (with board), per	
Miners.....do.....	2.00 4.00	month.....	20.00 40.00
Coal miners.....do.....	2.75 5.00	Cooks (with board), per month..	20.00 50.00
Engineers.....do.....	3.00 4.00	House servants, men (with	
Brick-layers.....do.....	4.00 6.00	board), per month.....	20.00 35.00
Shoe-makers.....do.....	2.50 3.50	House servants, women (with	
Gas-fitters.....do.....	3.00 3.50	board), per month.....	12.00 35.00
Day laborers.....do.....	2.00 2.50	Railroad brakemen (without	
Upholsterers.....do.....	2.50 3.50	board), per month.....	60.00 75.00
Cabinet-makers.....do.....	2.50 3.50	Butchers (with board), per	
Plumbers.....do.....	2.50 5.00	month.....	50.00 75.00
Tailors.....do.....	2.50 3.50	Lumbermen (with board), per	
Bakers.....do.....	2.50 3.00	month.....	35.00 40.00
Railroad trackmen.....do.....	1.50 2.25	Conductors.....per month..	75.00 100.00
Cow-boys (with board), per			
month.....	20.00 35.00		

Cost of living.—The following are about the retail prices, at distributing points in Wyoming, of staple articles:

Flour, first grade, Nebraska.....	per cwt..	\$3.50 to \$4.50
Flour, second grade, Nebraska.....	do.....	2.75 3.50
Potatoes.....	do.....	.75 1.50
Beef.....	do.....	6.00 8.00
Mutton.....	do.....	6.00 8.00
Veal.....	do.....	10.00 12.00
Bacon.....	per pound..	.10 .12
Lard, grocer's.....	do.....	.10 .12
Chickens.....	do.....	.18 .20
Turkeys.....	do.....	.18 .25
Wheat.....	per cwt..	1.50 1.75
Corn, sacked, Nebraska.....	do.....	1.00 1.75
Oats.....	do.....	1.00 1.75
Corn meal.....	do.....	1.50 2.00
Sugar, granulated.....	do.....	8.00 10.00
Salt, Liverpool.....	do.....	3.00

Kerosene	per gallon..	\$0.25	\$0.40
Coal	per ton..	2.50	6.25
Hay:			
In towns	per ton..	9.00	15.00
On ranches	do	5.00	12.00
Lumber:			
Native, rough	per M..	16.00	30.00
First quality, planed	do		40.00
California or Oregon, best	do	50.00	60.00
Shingles:			
Native	per M..	2.50	3.00
Oregon cedar	do	4.00	5.00
Wood:			
Native pine	per cord		5.00
Slabs	do		3.50
Ice	per ton..	6.00	10.00

Clothing, dry goods, and other articles easily transported and bearing light freight charges are but slightly higher in price than in Eastern and Middle States.

CONDITION OF THE INDIANS IN THE TERRITORY.

The Shoshone Indian Reservation, comprising 1,520,000 acres, is in Fremont County, and is the only Indian reservation within the Territory. There are at this agency about 1,100 Shoshones and 900 Arapahoes, who have been for a number of years under the care of the Interior Department. They have given little trouble to the Government, probably owing to their isolated position and the proximity of a military post. They still retain their tribal relations. As long as these relations exist the Indians are not likely to understand what it means to be individually responsible to the laws for their acts and be protected in all their rights in the same manner as white men. The means provided by the Government to civilize the Indians, especially in the direction of agricultural pursuits, are very limited, and as a result no great measure of good is being accomplished.

While the development of the Territory is retarded by having this large Indian reservation within its borders, it can hardly be expected that it should be given up without a proper regard for the rights of the Indians. In my report for 1886 I recommended the opening up for settlement of all abandoned military reservations and of the Shoshone Reservation, except so much as might be necessary for the support of the Indians, or a division in severalty among them. I now renew that recommendation. Complaints frequently reach this office that Indians are off their reservations and committing depredations upon live stock and other property. Unless a more strict surveillance is kept over the Indians to prevent their leaving the reservation serious trouble is likely to occur.

Through information recently received from Mr. John Fosher, U. S. Indian agent at the Shoshone Reservation, I learn that there are a few of each tribe away and that the exact number can not be ascertained, but that a very close approximate of those now in the reservation gives:

Sex.	Shoshones.	Arapahoes.
Men	212	215
Women	252	269
Male children	203	233
Female children	174	281

The agent informs me that although no formal allotment of lands in severalty has been made a large number of the Indians have selected land claims, made improvements in the way of houses, fences—and a few have shelter for their live stock—and agricultural implements. They all have ponies, a few cattle, but no work oxen. Some improvement is being made in their horse stock by better breeding. The Shoshones have more cattle than the Arapahoes. As trading among themselves is constantly going on the number owned can not be ascertained.

There are two schools in the reservation, the Wind River boarding-school at the agency, with some forty pupils, and the St. Stephen's Mission Catholic school, about 30 miles northeast of the agency near the junction of the Big Wind River and Big Popo-Agie, with some eighty pupils. The agent reports that the children in both schools make fair progress, some of them learning rapidly, but when they leave school they almost invariably adopt the dress and custom common to their tribe and appear to lose all interest in their studies and the education acquired while at school. They continue to speak the English language very little, although seeming to understand plainly what is said to them in that language.

The sanitary reports of the agency physicians show that for the last few years the deaths on this agency have exceeded the births.

Both tribes on the Shoshone Reservation raise some garden vegetables, grain, and hay. As they must depend very considerably on irrigation the past season has been very unfortunate, on account of drought and great scarcity of running water. Quite a portion of their crops will be lost.

PUBLIC BUILDINGS.

Prior to 1886 there were no public buildings owned by the Territory, and the attention of the ninth legislative assembly was called in that year to the need of more suitable offices for the convenience of the public and the preservation of the public records. It was shown that the various offices of the government were widely distributed in rented buildings, and besides being inconvenient were liable to have their valuable contents destroyed by fire. As a result of this the legislative assembly provided for the erection of a capitol building at Cheyenne, a hospital for the treatment of the insane at Evanston, a university at Laramie, and an institution for the education of deaf and dumb and blind at Cheyenne. Two years later a penitentiary at Rawlins was provided for.

The capitol.—This building is now nearing completion, having been constructed at an expense of over \$275,000. The capitol was designed by a competent architect, and is purely classic in style, bearing a resemblance in general outline to the Capitol at Washington. Its entire length and breadth, exclusive of the broad steps on three sides leading from the building, is 216 by 112 feet. The building is three and a half stories, and the height of the center and wings, from the ground to the roof, is 60 feet. From the central portion of the building rises a lofty dome, 153 feet in height and 30 feet in diameter at its base. At the main entrance is a projection or broad portico, surmounted by two groups of Corinthian columns, above which is a cornice and gable, treated with elaborate ornamentation. The principal material used in the construction of the capitol is a superior quality of sandstone. The new capitol is justly regarded as one of the finest public buildings in the West. It contains about sixty apartments, which afford ample accommodation for all departments of a State government.

University.—The Wyoming University, erected at a cost of over \$100,000, is located at Laramie, and has been in successful operation for nearly two years. Besides being liberally endowed by the legislature by an annual appropriation of over \$16,000, it has received a valuable land grant from the General Government. The university lands, as they are termed, have already been selected by a competent commissioner, and there will be found in this report a recommendation that the Department approve the renting of these lands, in order that the university can secure the benefit that may arise from the rental of the land. The university has an able faculty, and, like the public schools, provides a liberal education free to the youth of both sexes. The university building, which is one of the handsomest structures in the Territory, is constructed of stone. It is four stories in height, 157 feet in length, and 71 feet wide, and is heated by steam and lighted by electricity. The following is quoted from its prospectus:

It is the purpose of the management to make its instruction so full and thorough in the different departments that students leaving at any point will be able to take the corresponding rank in any of the great universities of the country.

Besides the collegiate preparatory department, a present necessity, but to be dispensed with so soon as the high schools of the Territory can be made to do its work, and the departments of the liberal arts, of letters, of philosophy, and of general science, each leading to its appropriate degree, and all of which are now in active operation, there are to be established in succession, and as early as practicable, several practical and professional schools, departments and courses, designed to fit the student for the leading pursuits in life, especially a normal department, a school of mines, an agricultural department, a fully equipped commercial school (excellent work is already being done by an experienced professor in this department), and finally a preparatory school of law.

The instructional force already numbers seven gentlemen doing regular professorial work, and several lecturers, who are under agreement to render services in certain departments, as they may be able, when occasion requires.

Fish hatchery.—The Wyoming fish hatchery is situated about 5 miles east of Laramie City, and is one of the most interesting places to visit in the vicinity. It is conveniently arranged and under excellent management, thousands of trout, salmon, whitefish, bass, and other varieties are hatched and annually distributed throughout the lakes and rivers of Wyoming.

United States penitentiary.—This building is the only institution in Wyoming owned by the General Government. It was erected just outside the limits of the city of Laramie in 1869, at a first cost of about \$40,000, and is under the direction of the United States marshal. It has recently been thoroughly overhauled and enlarged by an expenditure of \$30,000 and is now in excellent condition. The building is of stone and is heated by steam. It will comfortably accommodate one hundred and fifty convicts. There are at present but twelve inmates, the greater part of whom were sentenced here by United States courts in Colorado.

Wyoming penitentiary.—The legislature of 1888 appropriated \$30,000 toward the erection of a Territorial penitentiary at Rawlins, to cost \$100,000 when completed. The building is now being constructed in a very substantial manner of iron and stone.

Poor-farms.—Provision was made by the legislature of 1888 for a Territorial institution for the poor, to cost not exceeding \$25,000, and \$5,000 of the amount was appropriated. A farm has been purchased at Lander, Wyo., but no building erected.

Deaf and dumb and blind.—An asylum for the education of the deaf and dumb and blind has been erected at Cheyenne at a cost of about \$10,000. This institution has not yet been opened.

Insane Asylum.—The Territorial hospital for the treatment of the insane, at Evanston, is a substantial structure of brick and stone, and will comfortably accommodate 50 patients. There has been expended on grounds and buildings about \$75,000. A more extended account of this asylum is made under the head of "dependent and delinquent classes."

Value of Territorial public buildings.—Although Wyoming has a total indebtedness of but \$320,000, her public buildings and grounds have cost about \$500,000, and could not be duplicated for this amount. The grounds upon which they are located have increased in value, and the buildings have been honestly, intelligently, and economically constructed. In nine out of the ten organized counties in Wyoming court-houses and jails have been built of brick, iron, and stone. In Laramie County a very handsome hospital has been erected, and in all counties there are comfortable school-houses. In the cities and towns there are city halls, fire company and other municipal buildings of substantial character.

LEGISLATION.

Wyoming's laws are generally good and applicable to the Territory, its condition and people. They will be found embraced in one volume of the revised statutes of 1887, and in the session laws of 1888.

The Tenth legislature repealed in 1888 the bounty law relating to wild animals, the "Maverick" stock law, the act providing for county stock detectives, and others. The principal laws enacted by the last legislative assembly were as follows:

To provide a more strict observance of the Sabbath.

To create three new counties, Converse, Sheridan, and Natrona (the last not yet organized).

Requiring all private banks to publish sworn statements each quarter regarding their financial condition, and providing penalties for receiving deposits when the bank is in an insolvent condition.

Providing for the organization, control, and management of banking institutions, savings banks, and trust and loan companies.

Providing for the exercise of the right of eminent domain by the railroad companies.

Providing for the reports of Territorial officers.

To protect grazing lands of Wyoming from live-stock in the Territory.

Providing a method for the taxation of live-stock on the open range.

Creating the office of Territorial engineer, and concerning the appropriation of water.

Providing for the release of dower by married women.

To make the mechanics' lien law of Laramie County applicable to all parts of the Territory.

Providing for the bounding of school districts.

Regulating the practice of pharmacy.

Making it a felony to sign any false certificates of acknowledgment or jurat.

Describing lawful fences in the Territory and providing penalties.

Authorizing the governor to designate Arbor day.

Regulating the business of foreign mutual life-insurance companies in the Territory.

Authorizing the semi-annual payment of interest on bonds.

Requiring owners and operators in oil lands to plug their wells before abandonment.

Prohibiting the unauthorized wearing of a Grand Army badge, and using the letters "G. A. R." for business purposes.

A law for the promotion of immigration.

The re-arrangement of the legislative districts and the apportionment of members of the legislature.

An appropriation for the further construction and completion of public buildings.

Regarding liens on personalty.

To increase the powers of boards of county commissioners concerning artesian wells.

To prevent false registration of cattle and false pedigrees.

An act relating to game detectives and protection of game.

An act defining negotiable instruments.

An act making dogs taxable property and providing for their protection.

The following resolutions memorializing Congress, were passed:

Relating to the reclamation of arid lands and the preservation of the forests of Wyoming.

Concerning the control of school and university lands.

Concerning the Fort Bridger military reservation.

Praying for the admission of the Territory as a State.

Congressional legislation needed in Wyoming.—The importance of Congress giving attention to numerous matters in Wyoming is referred to in various parts of this report; but under the head of "recommendations" will be found a résumé of subjects requiring legislation.

UNDEVELOPED RESOURCES.

The resources of this Territory are in a measure undeveloped. The live-stock industry is the oldest, but there remains much unoccupied territory in which to extend this industry, and improved methods in conducting the business are likely to be adopted.

Agriculture is successfully carried on in every county of Wyoming to a limited extent, but with the prospect of more extensive and better modes of irrigation, together with wider railroad facilities, it will become one of the leading industries, and, together with the live-stock industry, will probably rank first in the wealth of the Territory.

With the exception of coal, mining is yet in its infancy. The coal measures cover nearly one-third the entire area and have scarcely been worked more than on the surface. The superior quality of much of the coal gives it a market more than 500 miles east and west of the Territorial lines. This industry will be found fully described under the head of "mineral resources."

Wyoming is an empire in its undeveloped resources, and only awaits the advent of capital and well-directed labor to make it one of the great States.

SOCIAL PROGRESS.

The formation and establishment of a new Territory always draw within its borders heterogeneous elements. This was true in the history of Wyoming. Some of its towns had unsavory reputations during the time of the construction of the Union Pacific Railroad and the first settlement of mining districts, but the rough element passed on, and a cultivated and enterprising class of young men, desiring to carve out a future for themselves, came to the Territory from the Eastern, Southern, and Middle States. These men had courage, muscle, and brain, and they gave life and business activity to the many industrial pursuits. The most of these men came unmarried, and, after becoming fairly settled in some remunerative employment or business, returned to their old homes and married, bringing wives from cultivated and refined circles, thus laying the foundation for Wyoming, which has insured a society that will compare favorably with any section of the United States in cultivation, refinement, hospitality, and all that goes with a high type of manhood and womanhood. The present inhabitants of Wyoming are homogeneous, distinctively American, and very energetic.

Woman's suffrage.—The first legislative assembly of Wyoming in 1869 conferred upon women the right to vote, recognizing the principle that "equality is a natural right." Two years later there was an attempt made to repeal the law, but without success, and no effort has

since been made to repeal or abridge the right of suffrage. No one will deny that woman's influence in voting has always been on the side of good government. The people favor its continuance, and it is not regarded as a matter of difference between political parties. The constitutional convention, composed of men from both parties, adopted almost unanimously the following provision :

The right of citizens of the State of Wyoming to vote and hold office shall not be denied or abridged on account of sex. Both male and female citizens shall enjoy all civil, political, and religious rights and privileges.

Religious matters.—Churches in Wyoming are very numerous. All towns of any considerable size are represented by one or more denominations and generally by all the prominent religious societies. There are many handsome and costly church structures.

Wyoming forms a diocese of the Catholic Church under the supervision of Bishop Burke at Cheyenne, and Wyoming and Idaho a diocese of the Episcopal Church presided over by Bishop Talbot, with residence at Laramie City. Time and space will not permit of a general description of the churches or church edifices throughout Wyoming, but I will extract a few brief items from the church statistics of Cheyenne as an example. What is true of Cheyenne will apply to other districts and towns. I am able to submit some points relating to the Catholic Church throughout the entire Territory.

St. Mark's Protestant Episcopal Church.—Organized in January, 1868. The 14th of July following a church edifice was commenced ; and August 23 following the structure was finished, at a cost of \$4,000, free of debt. St. Mark's rectory was begun July 6, 1869, and was finished the same year, the cost being \$5,000. The holy communion was first celebrated March 1, 1868, with five communicants.

Since the organization the parish has had eleven rectors ; the present rector is Rev. George C. Rafter. An imposing and commodious stone church building has recently been erected on a convenient site, at a cost of about \$30,000. It is furnished with handsome, upholstered pews, is lighted with gas, has an organ valued at \$2,500, and seats about 300.

First Congregational Church.—Organized June 13, 1869. Pastors, 1869 to 1871, Rev. J. D. Davis ; 1871 to 1873, Rev. Josiah Strong ; 1873 to 1875, no pastor ; Rev. C. M. Sanders commenced in August, 1875, and remained as pastor until November, 1887. Rev. A. W. Williams was called in December, 1887, and is the present pastor of the church. The first church building was dedicated November 14, 1869, and cost about \$4,000 ; the second church building was dedicated March 12, 1884, and cost over \$25,000. It is a beautiful brick edifice with all modern improvements, such as furnace for heating, incandescent electric lights, commodious parlors, lecture-room, library, and pastor's study. The present membership is about 175. It has a flourishing Sabbath-school with an average attendance of 125. The church owns a pastor's residence on grounds adjoining.

Second Congregational Church.—This church, organized by a few members of the First Church, is situated south of the Union Pacific Railroad, in South Cheyenne. It has a membership of 27, and Sabbath-school of 50 members. When the railroad machine-shops are completed and manned, the church will have a very important and useful field of labor. Rev. A. W. Williams is at present the acting pastor of this church. With increase of population the church will call a minister who can give his whole time to the work.

First Presbyterian Church.—The church building is a large brick

structure with stone trimmings. It has a fine pipe-organ for the main room, and a piano for the parlors. It is handsomely frescoed, and has 300 opera chairs, of the latest pattern, for seating its congregation. The church has good heating-furnaces, is lighted with gas, and the estimated value of its property is \$30,000. The general condition of the church is very prosperous, with a membership of 140; children in the Sabbath-school, 140. Rev. Richard E. Field, the present pastor, took charge in January, 1885. The annual contributions for current expenses and benevolent purposes average about \$5,000. The church also owns a neat two-story parsonage, constructed of brick.

Methodist Episcopal Church.—This church was organized in 1869 by Rev. Mr. Scott. The first building erected for church purposes was 36 by 54 feet in size. This building, although a very good one for the time in which it was erected, will be replaced very soon by a handsome brick structure, 56 by 80 feet in size, with lecture-room, class-rooms, parlors, etc. The brick parsonage, adjoining the church, is a comfortable residence, and cost about \$2,500. The church membership at present is 164, and there are 200 names on the Sunday-school roll. Rev. S. A. Bright is the present pastor. The estimated value of the church property is \$12,500.

First Baptist Church.—The First Baptist Church of Cheyenne was organized September 21, 1877, under the missionary efforts of Rev. D. J. Pierce, and the successive incumbents have been, respectively, Rev. William H. Young, D. D., Rev. A. B. Banks, Rev. George Brown, Rev. Samuel J. Nunn, and the present pastor, Rev. L. D. Lamkin. This body worship in a commodious brick structure, which is fitted with steam-heating apparatus and electric-light appliances. The church is now in a flourishing condition. The Sunday-school is maintained with lively interest, as well as the missionary and outside work of the denomination.

Second Baptist Church.—This church is at present without a pastor, but services are held at irregular intervals. The church property is valued at \$2,500.

African Methodist Episcopal Church.—This church was organized in 1876 with very few members, but has increased and now has a membership of 30, with an average congregation of about 50. The estimated value of the church property is \$4,000 and consists of a brick church and parsonage. The annual expenses of the church are about \$800, with an annual contribution to missions of over \$50. Rev. S. W. Bird is the present pastor.

Scandinavian Church.—This denomination has recently erected and furnished a building, is supplied with a pastor, and holds regular services.

Catholic Church.—The Catholic Church in the Territory is in a very prosperous condition both financially and numerically. It owns much valuable church, school, and cemetery property. It has 27 missions or congregations which are visited occasionally and 12 which are regularly attended. The educational institutions include two academies for young ladies, conducted by the Sisters of the Holy Child Jesus, and two parochial schools. The Sisters of Charity conduct a school for the Indians and a hospital, and all of these institutions are well attended. The Territorial boundaries are also the boundaries of the Catholic diocese of Cheyenne. Cheyenne is the cathedral city. The bishop, Rt. Rev. M. F. Burke, resides here and has two assistants, priests, to aid him in the management of the diocese and cathedral congregations. There are eight additional priests in Wyoming. The largest congrega-

tion is at Cheyenne. The cathedral parish has about 450 families, in all about 2,500 souls. Laramie City has a little more than half this number. Altogether the Catholic Church in Wyoming is active, progressive, and firmly established. It fully realizes that Wyoming is a promising field for future missionary work.

Young Men's Christian Association of Cheyenne.—Incorporated 1887. Present officers: W. N. Hunt, president; J. W. Lacey, vice-president; S. B. Tuttle, secretary; G. F. Rossire, treasurer. Has reading room with all Territorial papers on file; also prominent magazines and newspapers of the larger cities of the United States. It has fine gymnasium apparatus, but the gymnasium is now temporarily closed. About 50 active members now on rolls. Regular religious services are held at 4 o'clock p. m. Sundays.

Societies.—Wyoming contains many fraternal, charitable, literary, dramatic, and other societies usually represented in older countries, and all are flourishing. Among them are Masons, Odd Fellows, Knights of Pythias, Grand Army of the Republic, library associations (with many good libraries), Irish and benevolent societies, Good Templars, bicycle clubs, social and business clubs, and many others.

LIBRARIES.

The Territorial library, which contained about 6,000 books in 1882, now has over 14,000 volumes, exclusive of the public laws and documents of the Territory. Constant acquisitions are being made to the library by the purchase of valuable law books from appropriations made by the legislature and by donations.

The law providing for the establishment of county libraries, by levying a special tax of not less than one-eighth nor more than one-half mill for that purpose, has been taken advantage of by several counties, and the opportunities which they afford are highly appreciated by the public. In Cheyenne the Laramie County library contains more than 2,000 volumes, and 500 persons draw books regularly.

Nearly all the churches have libraries, and the district schools under the law are also provided with excellent libraries. The good work which these libraries accomplish can not be overestimated.

INDUSTRIAL PROGRESS.

The broad plains and mountain ranges of Wyoming invite the profitable investment of millions of dollars in mining, agriculture, stock-raising, and other pursuits. The resources of the Territory are mentioned elsewhere in this report, but neither the time allotted nor the space permitted for an annual report will enable justice to be done to the great undeveloped resources of the Territory, and future State, of Wyoming. From a perusal of the pages of this report referring to the industries of the Territory some idea may be had of the progress already made. Commencing a score of years ago with but a handful of men in all this broad land with a total valuation of but a few thousand dollars, the Territory now presents a commonwealth with a population of 100,000 and an *actual* valuation probably exceeding \$100,000,000. But the development already accomplished is only a mere indication of the future. It is not more than enough to show in a measure the flattering prospects, and illustrates that here all industrial enterprises are yet in their infancy.

THE WYOMING PRESS.

The newspapers of Wyoming number 31. Four of the number are dailies, 3 of them publishing both daily and weekly editions, 12 of the number receiving the Associated Press reports. There is 1 semi-weekly, 1 monthly; the remaining 25 are weekly journals. One is a live-stock, paper; 1 church paper, and the others are devoted to general Territorial and local interests.

The following is the list of those now published in the Territory:

Paper.	Editions.	Post-office.	County.
Cheyenne Sun.....	Daily and weekly...	Cheyenne.....	Laramie.
Cheyenne Leader.....	do.....	do.....	Do.
Daily Tribune.....	Daily.....	do.....	Do.
Northwestern Live Stock Journal.....	Weekly.....	do.....	Do.
The Boomerang.....	Daily and weekly...	Laramie City.....	Albany.
The Sentinel.....	Weekly.....	do.....	Do.
Laramie Weekly Times.....	do.....	do.....	Do.
Wyoming and Idaho Mission.....	Monthly.....	do.....	Do.
The Carbon County Journal.....	Weekly.....	Rawlins.....	Carbon.
Casper Weekly Mail.....	do.....	Casper.....	Do.
Platte Valley Lyre.....	do.....	Saratoga.....	Do.
Bessemer Journal.....	do.....	Bessemer.....	Do.
Sweetwater Chief.....	do.....	Bothwell.....	Do.
Rock Springs Independent.....	do.....	Rock Springs.....	Sweetwater.
The Miner.....	do.....	do.....	Do.
The Uinta Chieftain.....	do.....	Evanston.....	Uinta.
Evanston News.....	do.....	do.....	Do.
Buffalo Echo.....	do.....	Buffalo.....	Johnson.
Big Horn Sentinel.....	do.....	do.....	Do.
The Rustler.....	do.....	Bonanza.....	Do.
The Sundance Gazette.....	do.....	Sundance.....	Crook.
The Wyoming Farmer.....	do.....	do.....	Do.
The Newcastle Journal.....	do.....	Newcastle.....	Do.
The Mountaineer.....	Semi-weekly.....	Lander.....	Fremont.
The Fremont Clipper.....	Weekly.....	do.....	Do.
Douglas Republican.....	do.....	Douglas.....	Converse.
Bill Barlow's Budget.....	do.....	do.....	Do.
Lusk Herald.....	do.....	Lusk.....	Do.
Glenrock Graphic.....	do.....	Glenrock.....	Do.
Sheridan Post.....	do.....	Sheridan.....	Sheridan.
Sheridan Enterprise.....	do.....	do.....	Do.

MILITIA.

The Wyoming National Guards, Company A, of Laramie, and Company B, of Cheyenne, have been organized under United States laws governing militia. Each company has about 50 men, fully equipped, and they are excellently trained, disciplined, and drilled.

IMMIGRATION.

The necessity of attracting immigration to Wyoming was recognized by the legislative assembly in 1888, and an appropriation made of \$2,500, to be expended under the direction of the secretary of Wyoming. A very commendable report describing the general resources of the Territory was issued, and its distribution has no doubt attracted the favorable consideration of both capital and labor. There has, however, been no settled policy adopted by the Territory to promote immigration, but there is a growing interest on the part of railroads and colonization companies to settle up the country. The great railroad corporations have made liberal offers and provided exceptional advantages and rates to settlers to locate in many of the Western States, and similar advantages are anticipated for Wyoming when the Union Pacific, Burlington, and Northwestern Systems have further extended their lines throughout the Territory.

Foreign population.—The distribution of the immigrants among the States and Territories is of interest, but no reliable information on this subject can be obtained. The census of next year will probably show a percentage in nationality quite similar to the other Northwestern States and Territories. The alien population would probably rank in numbers in the following order: Germans, Irish, Swedes and Norwegians, English, Scotch, and Finlanders. There are about 500 Chinese employed in coal mining and other industries.

DEPENDENT AND DELINQUENT CLASSES.

The Wyoming laws relating to dependent classes are such as to meet only the wants of a new community, the general system being one of temporary relief. We have no poor-houses or resident pauper class, and such as become a charge on the counties are afforded temporary aid either at home or in the hospitals, while many are furnished the means to return to their friends in other States or Territories. The law governing the poor and paupers makes the following provisions: The board of county commissioners of each county are vested with entire and exclusive superintendence of the poor in their respective counties, and may make a contract for the necessary maintenance of the poor in such cases, or may appoint agents to provide for the same.

The board of county commissioners of any county also have the power, if they deem it best for the interests of the county, to cause to be built in their respective counties work-houses for the accommodation and employment of such persons as may from time to time become a county charge, and such work-houses shall be under such rules and regulations as the county commissioners may deem just and proper. With the exception of a hospital for the accommodation of the poor, the sick, and the infirm of Laramie County, at Cheyenne, there have been no poor-houses built at county expense. The care and maintenance of the pauper insane has been a charge upon the respective counties, and for a number of years they have been kept at a private asylum in Jacksonville, Ill., at an expense of about \$25 per month. An asylum for the support and care of the insane was provided for by the legislative assembly of 1886, and by appropriations then and since made of over \$60,000 a building has been erected at Evanston, Uinta County. The building commission having secured a gift of 160 acres of land, built thereon the central portion of the building and a wing with a view of completing at some future time. The hospital, which is on the American plan, is constructed of brick and stone with two stories and a mansard roof above the basement, and when the wings are completed will have accommodation for one hundred patients. The legislature of 1888 provided for heating apparatus and furnishing the building, and in April last the hospital was opened for the reception of patients.

The institution has now between fifteen and twenty inmates, the greater part of whom were transferred from Illinois. The hospital will compare favorably with institutions in other States that have been erected with a view to comfort and economy. It is provided with steam heat, electric light, and other conveniences. A board of three commissioners, appointed by the governor, have entire direction of the institution, and appoint the superintendent, who employs all help needed in the asylum, subject to the approval of the board of commissioners. The law provides that paying patients whose friends offer and will pay, or who have property to pay their expenses, shall be admitted to the asy-

lum according to the terms directed by the board of commissioners thereof; but the insane poor shall in all respects receive the same medical care and treatment as the paying patients.

The board of penitentiary commissioners, composed of three members appointed by the governor, are authorized by law to make contracts to provide for Territorial prisoners. Under this law, pending the completion of the Wyoming penitentiary building, all prisoners sentenced by the courts of Wyoming for more than one year are sent to the Illinois State prison at Joliet, where they are kept for 25 cents a day. Previous to the abolishment of contract system at Joliet the convicts of Wyoming were maintained there for their labor, the only tax being for transportation and the usual fee of \$5 given on discharge from prison. The amount appropriated for the transportation and maintenance of prisoners for the two years ending March 31, 1890, was \$20,000; for juvenile delinquents, \$6,000; and contingent expenses of penitentiary commission, \$2,500. The average number of Wyoming convicts at Joliet during the year 1888 was about one hundred.

The legislature of 1888 appropriated \$30,000 toward the erection of a Territorial penitentiary at Rawlins, Wyo., to cost \$100,000 when completed. This building is now under construction.

It is lawful for any judge of the probate court of any county in the Territory to commit to the care, custody, and guardianship of the house of refuge of any State where provision has been made, any child or children, under the age of sixteen years, who are disobedient or uncontrollable, or who have been convicted of certain offenses specified in the law. Under this provision twelve or fifteen juvenile delinquents have been annually kept at the reform school at Golden, Colo., an excellently managed institution, where they have received the benefits of an education, besides being taught some useful trade.

There are ten organized counties in the Territory, and with one exception they are all provided with fine court-houses, built of brick, iron, and stone, that have cost from \$30,000 to \$50,000 each. Substantial jails have also been provided, and, as a rule, the prisoners are well cared for, no serious complaint having been made for several years.

An institution for the education of the deaf, dumb, and blind was erected at Cheyenne at a cost of \$10,000 in 1887. The proviso that the institute should not be opened until there were twelve pupils ready to enter the school has delayed its organization.

Convicts.—The United States penitentiary at Laramie, which is for the imprisonment of United States prisoners only, has twelve inmates at the present time. A Territorial penitentiary is in process of construction at Rawlins. For a number of years all persons convicted of felonies against the Territory of Wyoming have been sentenced to the State penitentiary at Joliet, Ill. The following communication in regard to Wyoming prisoners is from the chairman of the penitentiary commissioners:

SEPTEMBER 25, 1889.

SIR: Agreeably with your request of this date, I have the honor to submit the following report of the Territorial convicts now in confinement in various penitentiaries abroad, under and by virtue of existing contracts between the authorities thereof and this board of commissioners:

In confinement at Joliet, Ill.....	80
In confinement at Lincoln, Nebr.....	1
In confinement at Jacksonville, Ill., Oak Lawn Retreat for Insane.....	2
In confinement at Golden, Colo., juvenile delinquents	7
Total	90

The various places of confinement cited above have during the current year been visited and inspected by a representative of this board and the condition of the Territorial convicts found to be satisfactory in every particular.

Yours, respectfully,

T. DYER,
Chairman.

Hon. FRANCIS E. WARREN,
Governor, Wyoming Territory.

Pardons.—Prisoners of exceptionally good conduct and those of extreme youth or in failing health have in some cases been pardoned on proper recommendation, and others have been restored to citizenship upon expiration of their sentence.

THE CLIMATE OF WYOMING.

Wyoming has superior climatic advantages. Remote from the sea-coast and large bodies of water, there is but little fog or rain, and the general prevalence of sunshine renders the atmosphere dry, rare, and clear. Cloudy days are the exception. Objects are seen at great distances, and the atmospheric influence on the human system is bracing and healthful. The following tables illustrate Wyoming's climatic conditions as compared with other localities :

Stations.	Elevation.	Means.				Atmosphere—1886.		
		Barometer (ten years).	Relative humidity (four years).	Precipitation (ten years).	Temperature (ten years).	Clear.	Fair.	Cloudy.
	<i>Feet.</i>	°	°	<i>Inches.</i>	°	<i>Days.</i>	<i>Days.</i>	<i>Days.</i>
Augusta, Ga.....	183	30.140	69.2	48.98	640.2	130	152	79
Jacksonville, Fla..	43	30.030	69.0	55.94	690.2	102	176	87
Boston, Mass.....	142	29.840	68.5	49.47	480.5	131	145	88
Newport, R. I.....	34	29.950	74.3	50.20	500.3	.....	.....	.....
New York, N. Y....	164	29.857	70.2	42.70	510.3	124	168	73
Philadelphia, Pa..	52	30.084	68.8	41.89	520.2	109	188	68
Chicago, Ill.....	661	29.317	69.2	35.47	490.3	99	173	93
St. Paul, Minn....	811	29.133	67.3	29.59	430.9	102	178	85
Denver, Colo.....	5294	24.778	45.8	14.77	490.1	147	160	57
Santa Fe, N. M....	7046	23.263	41.4	14.17	480.5	139	194	32
Salt Lake, Utah..	4348	25.644	40.3	17.52	510.8	129	159	75
Los Angeles, Cal..	350	29.647	65.8	18.97	590.8	181	145	38
Cheyenne, Wyo..	6105	24.004	59.0	11.32	14.0	143	179	42

The following is the average temperature for June, July, and August during the past sixteen years, as obtained from the Signal Service Office :

Year.	Temperature.	Year.	Temperature.	Year.	Temperature.
	°		°		°
1872.....	62.5	1878.....	64.3	1883.....	61.6
1873.....	66.7	1879.....	65.5	1884.....	62.6
1874.....	67.2	1880.....	63.0	1885.....	63.3
1875.....	62.6	1881.....	67.6	1886.....	64.9
1876.....	65.0	1882.....	62.7	1887.....	64.1
1877.....	64.2				

To show the comparative condition of health in Wyoming with other places, the following medical statistics of the U. S. Army are submitted. The troops of the United States are, perhaps more nearly than any

other class of persons, subjected to the same surroundings and conditions, and their habits are uniformly the same.

Localities by States and Territories.	Average No. of troops per year stationed in each locality.	Average No. per year treated in hospital for disease.	Average No. per year died from disease.	Ratio to 1,000 of mean strength.	
				Treated each year for disease.	Died each year from disease.
Atlantic coast, New York to Maine.....	841.21	486.99	15.00	1,768.10	17.83
Arizona.....	1,168.32	2,481.15	14.15	1,124.14	12.11
New Mexico ..	954.79	76.02	7.42	1,231.70	7.77
California and Nevada.....	1,393.24	2,212.60	9.60	1,587.62	6.88
Pennsylvania, Indiana, and Michigan...	438.25	561.75	2.65	1,282.53	6.05
Montana.....	622.74	720.90	3.50	1,157.62	5.62
Dakota.....	2,004.37	2,453.35	9.55	1,224.06	4.76
Wyoming.....	1,919.10	2,406.24	9.05	1,253.77	4.71
Oregon, Washington, and Idaho.....	730.55	074.60	3.40	1,471.23	4.66

A complete table, giving rain-fall and general weather statistics, will be found in this report.

CIVIC DIVISIONS.

The counties.—Wyoming, when organized in 1869, contained two counties (formerly under the territorial jurisdiction of Dakota), Laramie, and Carter.

At the present time the Territory is divided into ten counties, as follows:

Counties.	Organized.	Length.	Width.	Area, omit- ting frac- tions.
		<i>Miles.</i>	<i>Miles.</i>	<i>Acres.</i>
Laramie.....	December, 1869.....	108	65	4,520,480
Albany.....	do.....	99	45	3,057,920
Carbon.....	do.....	108	72	4,976,640
Sweetwater.....	do.....	110	84	5,913,600
Uintah.....	do.....	275	55	9,680,200
Johnson.....	December, 1879.....	103	100	6,624,000
Fremont.....	March, 1884.....	192	105	12,942,400
Crook.....	January, 1885.....	103	100	6,624,000
Converse.....	January, 1887.....	108	70	4,850,000
Sheridan.....	do.....	100	30	1,920,000

Under the head of each county will be found a description of its general resources and of the principal centers of trade. The valuation of taxable property and its classification in these counties will be found in the tables forming a part of this report.

ALBANY COUNTY.

This county contains an area of 4,450 square miles. Nearly 2,000,000 acres of this amount are on the Laramie plains, with an altitude of from 6,000 to 7,000 feet.

A large portion of the land is adapted to agriculture. Very large crops of hay are annually provided, and oats, vegetables, etc., are successfully cultivated. Nearly the entire county affords fine grazing. The hills and high mountains surrounding the plains furnish an abundant supply of water, the principal streams being the Big and Little Laramie Rivers and their tributaries.

Albany County is one of the most progressive and prosperous in the territory.

Several large soda lakes are situated on the Laramie plains, covering hundreds of acres, and having deposits of soda from 10 to 40 feet in thickness. A large section of country is underlaid with coal and iron, and in the mountains are found numerous gold and silver mines, both lode and placer, some of which have been profitably worked. Plumbago, asbestos, kaolin, mica, etc., have been discovered within the county, and marble of excellent quality and many other varieties of superior building stone.

The surrounding mountains are heavily timbered, furnishing an abundance of lumber.

City of Laramie.—The principal trade center in Albany County is Laramie, the county seat. Its location has many natural advantages, and is perhaps the handsomest in the Territory. Laramie was first settled in 1868 during the construction of the Union Pacific Railway, but at the present time has a population of about 6,000. It is a supply point for ranchmen, miners, and the important railroad and manufacturing interests that have been located there. Extensive machine shops, employing several hundred men, are in operation; also a large rolling-mill, a burnetizing establishment for the treatment of railroad ties, and chemical works for refining and preparation of the natural soda for market. Laramie has a flouring mill, glass works for the manufacture of window glass, tannery, soap works, planing-mill, and numerous other enterprises. The Wyoming University, in which the citizens of Laramie take great delight, is located here; a private school and hospital under the care of Sisters of Charity. There is a substantial county courthouse and jail, constructed of brick and stone, and fine school buildings, churches, residences, and business establishments. The city has one daily and three weekly newspapers and a religious monthly, three national banks, water and sewerage systems, electric light, telephone exchange, opera house, fine buildings erected by various fraternal societies, etc. Laramie is the home of the Episcopal bishop for Wyoming and Idaho. The territorial fish hatchery is within 5 miles of the city, and the United States penitentiary a half mile outside the city limits. Laramie, with many natural advantages, has a brilliant future.

CARBON COUNTY.

Bordering on Colorado, and situated in the center of the southern portion of the Territory, this county has an area of about 7,775 square miles. The principal business now carried on in the county is stock raising and coal mining. There are also extensive quarries of building stone successfully worked, and gold and silver is mined a little in some parts of the county. Iron ore exists in immense quantities, and very excellent mineral paint has been largely manufactured here. Owing to its superior quality as preservative of iron against rust, it has been used for painting the Brooklyn Bridge and elevated railway systems of New York. An analysis shows the following composition:

	Per cent.
Iron peroxide.....	90.2
Sulphur and lime	1.4
Insoluble matter.....	7.2
Water	1.2
Total.....	100.0

Sheep-growing receives much attention and is very successfully prosecuted. Nearly one-fourth of a million of sheep were sheared in 1889, averaging about $8\frac{1}{2}$ pounds of wool per head. The sheep are of large size, healthy, and keep in splendid flesh the year round with no other feed than obtained in grazing.

The beautiful sandstone from which the Wyoming capitol building is constructed came from the Carbon County quarry, situated 2 miles from Rawlins.

City of Rawlins.—This city is on the Union Pacific Railroad, and is the county seat of Carbon County. Its altitude is about 7,000 feet. It is a short distance off the crest of the continental divide, where it is crossed by the Union Pacific. Rawlins has a population of between 2,000 and 3,000, is the terminus of the east and west mountain divisions of the railroad, and has round houses and quite extensive machine shops, employing a large number of men. Rawlins is quite a distributing point, having trade with the outlying country a distance of about 200 miles north and south of the railroad. Daily and tri-weekly mail stages leave here for northern and southern points. The Territorial penitentiary, to cost \$100,000 when finished, is being constructed here, and the public-school houses of the county and city are substantial and handsome buildings. The court-house, erected of stone, cost nearly \$50,000, a public-school house \$35,000, and one of the fine business blocks has been erected at an outlay of over \$50,000. There are many other substantial business houses, besides residences, several churches, opera-house, etc. Rawlins has a weekly newspaper and one banking institution.

Carbon County has several other towns of considerable size. The town of Carbon, with a population of perhaps 2,000, is almost exclusively a coal-mining district. Dana and Hanna are new coal-mining places, and, on account of the superior quality of that product, they are likely to outgrow Carbon. The new town of Casper is in the northeastern part of the county at the present terminus of the Wyoming Central and on the North Platte River. It is surrounded by a fine grazing country, the center of an extensive oil basin and numerous soda lakes. The town, which is less than two years old, has several large mercantile establishments, a bank, and weekly newspaper. Freight in large quantities is shipped from Casper to Lander and Fort Washakie.

Saratoga, so called on account of its hot sulphur springs, which possess rare medicinal qualities for rheumatism and kindred diseases, is in the southern part of the county, on the banks of the North Platte River. It is in the center of a good agricultural valley, with abundance of timber and mineral prospects in the surrounding mountains. A weekly newspaper is published here.

The towns of Bothwell and Bessemer, in this county, each have a weekly newspaper.

An enabling act, providing for the organization of the proposed county of Natrona, will include nearly one-half of the northern part of the present county of Carbon.

CONVERSE COUNTY.

Converse County has an area of about 7,000 square miles, and, though organized less than two years ago, has an assessment roll of over \$2,000,000. The Wyoming Central Railroad traverses its entire length from east to west, and the Cheyenne and Northern, now under construction, will pass through from south to north. The North Platte

River, with its many tributaries, flows through the central portion of the county, and will furnish water to irrigate a very considerable portion of the county. Stock-raising is extensively carried on, also coal-mining, a great portion of the area being underlaid with coal. Much of the county is well adapted to agriculture, on account of its low elevation and abundant water supply. This industry is but little developed. Large deposits of iron ore, assaying from 60 to 70 per cent., and metallic iron are found in this county, and the Laramie Range has many excellent prospects, which assay in gold and silver from \$65 to \$250 per ton. Copper is also found accompanying gold and silver. Marble, limestone, gypsum, mica, glass sand, and potter's clay are also among its mineral resources. Pine timber is found in the hills and mountains, supplying native lumber at moderate prices.

City of Douglas, the county seat, is located on the Platte River and Wyoming Central Railroad, and has about 800 inhabitants. The city is putting in a good system of water-works, has its streets well graded, good sidewalks, a handsome brick school-house, and numerous substantial business places and dwelling houses. A national bank is located here, and occupies a handsome brick and stone building. There are two weekly newspapers published at this point.

At Inez, 16 miles from Douglas, are the mines of the Fetterman Coal Company, which supply large quantities of coal to the Wyoming Central Railroad.

Glenrock and Lusk are towns in this county on the Wyoming Central Road. Each has a weekly newspaper, a bank, and good business houses and residences. At Glenrock are the mines of the Dale Creek Coal Company. Lusk is on the Niobrara or Running Water River, in the midst of a splendid grazing country, and where agriculture is carried on without irrigation. The soil is deep and rich, and good crops have been harvested.

CROOK COUNTY.

Crook County, organized in 1885, with a voting population of a little over 500, is one of the most promising counties in the Territory. Its area is 10,300 square miles. It is watered by the Powder River, Little Powder, Cheyenne, Belle Fourche, Little Missouri Rivers and their numerous tributaries. Along these streams are fine farming lands growing every variety of grain and vegetables usually produced in southern Dakota and northern Nebraska. Very little irrigating is done in this county, the most of the lands in the valleys being adapted to agriculture without the artificial application of water. Wild fruits of the smaller varieties, such as plums, gooseberries, currants, berries, etc., grow plentifully. There is good timber in the eastern part of the county and excellent grazing lands throughout. A branch of the Burlington and Missouri Railroad is being built into Crook County near the southeastern corner, and will probably traverse the entire county east to west, with a branch running to the northern line. The building of a railroad has been hastened by the discovery of large deposits of good coking coal, and the mines are expected to furnish a vast tonnage for the railroad and supply coal to portions of Dakota and the northwestern part of Nebraska. Large quantities of this coal will find a market in the adjoining States and Territories on account of its coking properties, even where coal for necessary fuel purposes is furnished from other points.

There are tin mines upon which development work is being pushed in the eastern portion of the county. The great number of men that will necessarily be employed in the mining of coal, tin, and other minerals in

Crook County will furnish a market for its agricultural products. Silver, lead, and copper are found in this county, and some work has been done towards their development, while the gold placer mines on Sand Creek have also been worked with profit. Gypsum is found in inexhaustible quantities, and superior building stone, including limestone, granite, porphyry, etc. Salt-producing springs have been discovered near Jenney's stockade, and an oil district in the same vicinity covers some 400 square miles. A more elaborate account of the minerals of this county will be found in the paper by L. D. Ricketts, Territorial geologist, which is made a part of this report.

City of Sundance.—Sundance, which is the county seat of Crook County, has two banks, two weekly newspapers, a substantial and imposing brick court-house; also a system of water works, a hose-house built of brick, and town hall. Sundance is reached by stage from White-wood, Dak., on the Rapid City branch of the Northwestern Railroad. Upon the completion of the Burlington Railroad to a point within 40 miles south of the city a stage route will probably be established.

FREMONT COUNTY.

Fremont County, with an area of over 20,000 square miles, is the largest in the Territory. It contains perhaps more undeveloped wealth than any other county. Gold, silver, and the base metals are found in nearly all sections of the county. There are rivers or small streams in all the valleys, and the altitude in some parts of the county is less than 5,000 feet. Agricultural products, in a few localities, can be grown without irrigation, but the yield is greatly increased by using water.

Stock raising is the principal industry. The county has no railroad within its borders, and its extensive basins of petroleum, immense beds of coal, and other products must await cheaper transportation than is now afforded.

The Shoshone Indian Reservation occupies a large portion of the central part of the county, and includes the fertile valleys of the Wind River. Some conception of the size and importance of this county can be had when it is stated that it is larger in area than Massachusetts, Rhode Island, and Delaware combined, and more than one-third to one-half of its area is suited to agricultural pursuits.

About 4,000 square miles of this county is underlaid with coal, besides vast deposits of soda and exhaustless fields of oil. Gold, silver, copper, iron, marble, granite, etc., are found in many localities, but aside from mining the precious metals these resources remain undeveloped. This county is estimated to have produced more than \$5,000,000 in precious metals; and quartz and placer mining is more active here than in any other part of Wyoming. A French syndicate, whose operations are managed by Mr. Emile Granier, has invested over \$250,000 in the development of rich placer grounds, and it is believed the project will yield remunerative returns.

Lander.—The county seat of Fremont County is quite a prosperous town. It has a bank, two weekly newspapers, good schools, and a commodious and well-built court-house of brick and stone. This town is reached by stage from the Union Pacific at Rawlins, 130 miles south, and a stage line is also operated between Lander and Billings, Mont., on the Northern Pacific Railroad. The principal business comes from the south on the line of the Union Pacific. Within the past year, however, considerable freight has been shipped from the East via the Wyoming Central and Casper, about 150 miles distant from Lander. The

Shoshone Indian Agency and the military post of Fort Washakie are located about 15 miles from the county seat. Lander has a flouring mill and is soon to have an electric-light plant. The town is well built and is provided with churches and good schools. The subject of incorporation as a city is under consideration.

JOHNSON COUNTY.

Johnson County has an area of nearly 10,500 square miles, comprising rolling plains, fertile valleys, and extensive forests. The range of mountains known as the Big Horn traverse almost its entire length, rising to an altitude of nearly 14,000 feet, while many of the valleys are less than 5,000 feet above the sea-level. The county has no railroad and consequently no adjacent outlet for its surplus products. It is a good grazing country, and is not excelled by any other portion of the Territory as an agricultural region. Johnson County has vast oil and coal deposits and other minerals. It is one of the best watered divisions in the Territory; and, as the soil is good and much of its surface is favorable to cultivation, its agricultural possibilities can hardly be estimated. Timber in this country is very plentiful and furnishes the only supply of lumber that is used or needed by settlers. Johnson County has a prosperous fair association, organized in 1886. Meetings are held in June and September, and \$10,000 are distributed in premiums and prizes.

City of Buffalo.—Buffalo, the county seat, is located on Clear Creek, 225 miles north of the Union Pacific Railroad and about 140 miles from the Wyoming Central at Douglas, and is reached by stage from that point. The city has an electric-light plant, water works, a \$40,000 court-house, a \$15,000 three-story brick flouring mill, good school buildings, national bank, two newspapers, several churches, and numerous brick residences and business buildings. Fort McKinney, a regimental post, is situated 2 miles from the city. The scenery about the post and city is very fine. A stage line extends from Buffalo to Custer, Mont., on the Northern Pacific Railroad, also a stage line to Sundance. Telegraph and telephone lines connect the city with the fort and with railroad points. Buffalo has a good volunteer fire department, building association, and board of trade. Fraternal societies are well represented. A United States land office is situated here.

LARAMIE COUNTY.

This, the oldest county of Wyoming, covers over 7,000 square miles, and is located in the southeastern portion of the Territory. Being first in settlement, it is the most developed, and ranks first in wealth and population. The county slopes toward the eastward from the Black Hills of the Laramie range and varies in altitude from 4,000 to 8,000 feet. Probably one-fourth of this country can be successfully irrigated from the numerous streams in all parts of the county. There is another portion upon which agricultural crops are being raised without irrigation, and the remainder is superior grazing land. The county now supports an immense number of cattle and horses and some sheep. There is a great variety of undeveloped resources in iron, coal, copper, gold and silver, marble, sandstone, granite, mineral paint, mica, etc., all being found in great quantity.

The county generally comprises rolling plain and level land easily broken and cultivated, being free from stone and other obstructions.

In exceptionally wet seasons the natural rain-fall is sufficient to produce grain and vegetables, and as the soil is rich large crops are gathered. To insure a reliable crop, however, irrigating ditches and a supply of water are necessary. During a period of four months in 1886 there were recorded papers for over 500 canals and ditches, averaging some 1,200 miles in length, and covering more than 200,000 acres of land in the southern and central portion of the county. The works of one irrigating company include 2 canals, 37 and 29 miles long, respectively, and from 20 to 30 feet wide, and a tunnel through solid granite nearly three-fourths of a mile long, large enough to admit a flow of 1,500 cubic feet of water per second. This enterprise is intended to reclaim over 50,000 acres of desert land, and cost \$500,000. There are other companies that have expended from \$20,000 to \$75,000 each in irrigating ditches. The North Platte runs diagonally across this county, and the Laramie River, a large stream, empties into it from the south. Numerous large creeks, such as Horse Creek, Lodge Pole, Crow, and others rise in the Laramie range, skirting the western boundary of the county and flow eastward across the county into Nebraska.

The Union Pacific railway crosses near the southern line, the Cheyenne and Burlington enters at the southeast corner, and the Denver Pacific and Colorado Central run southward from Cheyenne. The Cheyenne and Northern runs northward across the country. The Wyoming Central, while not touching the county on the north, runs in Converse County almost parallel with and quite near to the northern line of Laramie County. Railroad lines are projected from Cheyenne northeastward to the Northwestern Railway, northward by the Burlington to connect its northern and southern Wyoming branches; also southward and west by the same company.

City of Cheyenne.—The county seat of Laramie County and capital of the Territory is on Crow Creek, in the southern part of the county. It is a well laid out, handsomely built city, and is noted for the enterprise of its citizens. It was designated as the capital of the Territory in 1869, and the proposed constitution for Wyoming makes it the State capital. Cheyenne is 516 miles from Omaha, on the Union Pacific, and is at the junction of the Cheyenne and Northern, Colorado Central, and Denver Pacific railways. It is the present terminus of the Cheyenne and Burlington, and will doubtless be the junction of the Burlington routes, extending north, west, and south. Extensive shops of the Union Pacific are located here, which will cost between \$2,000,000 and \$3,000,000 when completed, and will employ 2,000 or more men. The amount expended in shop buildings and machinery the present year will exceed \$500,000, and the force will be increased before the close of the year by about 500 men.

Cheyenne has an extensive system of water-works, good sewerage system, fire department and fire alarm system, telephone exchange, electric and gas light in streets and buildings, opera house, club houses, expensive business blocks and elegant residences, ten churches, four banks with an average capital of over a million dollars, and three daily and three weekly newspapers. The city has three large public school buildings and another authorized to be built; a convent building erected at a cost of nearly \$50,000; deaf, dumb, and blind asylum; county hospital; and also a capitol building, which is described in this report under the head of public buildings. The city has a very handsome public park, covering four blocks; has commodious hotels, street cars, substantial and fine society buildings, such as Masons, Odd Fellows, Knights of Pythias, etc.

Fort Russell, 3 miles northwest of Cheyenne, is a permanent military post, the largest and most important in the Department of the Platte. It has lately been supplied with modern water and sewerage system, and the buildings for officers and men are of brick, containing all the modern improvements.

Cheyenne enjoys a free mail-delivery system. It is the supply point for an extensive stock-raising country adjoining. The city is justly noted for its buildings, numerous shade trees, lawns, stone and cement sidewalks, and perfectly graded streets. The Territorial Fair Association grounds are a mile from the city. Cheyenne has a board of trade, a Young Men's Christian Association, with free reading-room and gymnasium, and fraternal societies are well represented. The Union Pacific has here a handsome station building of red and gray sandstone, 225 by 56 feet in size, two and three stories high and costing over \$100,000. The Burlington has a fine brick and stone station, which cost with ground under it about \$90,000. The towns of Pine Bluffs, Granite Cañon, Silver Crown, Chugwater, Bordeaux, Uva, Wendover, Fairbanks, and others are in Laramie County.

SHERIDAN COUNTY.

This county occupies a position in the north central part of the Territory, is 100 miles from east to west along the line of Montana, and 30 miles north and south, giving an area of 3,000 square miles, or about 2,000,000 acres of land, which competent authority has divided as follows:

	Acres.
Agricultural.....	640,000
Grazing	900,000
Mountains, timber, etc	500,000

What this county needs more than anything else is railroads. It possesses many natural routes for railroads to approach from either north or south. Surveys have been made through this county by the Burlington, the Cheyenne and Northern, and the Northern Pacific. The building of a railroad through the county will greatly stimulate all branches of trade and add to the already increasing growth of the county, and it is hoped the next year or two will witness the advent of one or more roads. Sheridan is a new county, authorized by the legislature in 1888, when it was taken from the northern part of Johnson County.

The financial condition of the county is good, and it has excellent prospects. It is, perhaps, the most advanced county in the Territory as regards agriculture, and abundant crops of grains and vegetables of the best quality are annually grown. The soil is rich and fertile, and an abundance of water to irrigate is constantly furnished from the Big Horn Range, extending north and south across the county. When the rains are abundant irrigation is unnecessary for moisture, but is useful here, as elsewhere, in fertilizing the soil. In this county stock raising, combined with farming, is, perhaps, pursued to a greater extent than in any other. Nature has supplied this county with superior grasses in abundance, and the raising of live stock, either in small or large herds, is very successful. Good schools, averaging seven months per annum, are established throughout the county. The average monthly salary of teachers is over \$52. Church services, well attended, are held in nearly all parts of the county, and the organization of churches is advancing. The mineral resources are, to a great extent, undeveloped. Some gold and silver

mining is done in the Big Horn Mountains, and copper is found in proximity. The county is rich in coal of fair quality, which is very accessible, being found in the hills adjoining farming lands. The quantity is inexhaustible, but is at present used only to supply the farmers and settlers. A large supply of timber is found in the mountains, and the lumber manufactured of it is of good quality and suitable for building purposes. There are eight saw-mills reported at work in the county. Timber is also found along the streams. This county has the distinction of having the first agricultural fair held in Wyoming.

City of Sheridan, the seat of government of this county, is beautifully situated near the junction of Big and Little Goose Creeks. The town is surrounded on all sides by broad and fertile valleys, well watered, and producing in abundance a large variety of agricultural products. No town in the Territory is situated in the midst of so extensive a farming region—good roads, well graded and bridged, laid out in all directions. It partakes largely of the nature of the growing towns and cities of the grain-growing Western States. There are a dozen or more mercantile establishments, representing the different lines, and residences and general buildings in proportion. It has an artesian well, supplying pure soft water.

Sheridan County has other thriving towns.

SWEETWATER COUNTY.

This county contains nearly 10,000 square miles and enjoys the distinction of being the principal coal-producing county in Wyoming. It is also adapted to stock raising and agriculture. Green River flows through this county and has many large tributaries, and the streams, as a whole, offer an almost inexhaustible supply of water with which to reclaim the dry but fertile lands. The Union Pacific Railroad extends through this county from east to west, and the Wyoming Eastern, or Pacific Short Line, will pass through the northern portion. Capital is needed for extensive irrigation works. An eastern company are already at work on the Big Sandy, and their operations embrace the taking out of a large canal, the irrigation of an immense area, and the founding of a town and agricultural district.

The town of Green River, the county seat of Sweetwater County, has not adopted a municipal government. The town is on the Union Pacific Railway where it crosses the Green River. It is the junction of two divisions on the main line of the Union Pacific and the Oregon Short Line division, and extensive repair shops are located here. The surrounding country is devoted to stock raising, and coal mining is extensively carried on within 15 miles. At this point water is taken from the Green River through a large system of water-works to supply the city of Rock Springs.

Rock Springs, in Sweetwater County, is a mining city of some 3,000 inhabitants and is in the best coal-producing country in the Rocky Mountains. The Rock Springs coal is justly celebrated from the Pacific Ocean to the Missouri River. The city has a water-works system which cost exceeding \$200,000. Its streets and buildings are lighted with arc and incandescent electric lights. It has a bank, two newspapers, two schools, four churches, volunteer fire department, excellent commercial houses, suitable hotels, and numerous residences. Perhaps no city or town in Wyoming is increasing in population, wealth, and general importance as rapidly as Rock Springs. Though situated in the much-abused Bitter Creek region, it is destined to become one of

the large centers of population. The coal mines here furnish employment for over 1,500 men, and this number will be more than doubled in the not distant future. The city formerly contained some 800 Chinamen, but the number has been reduced about one-half, and these are gradually giving way to other classes of laborers.

UINTA COUNTY.

Uinta County covers over 15,000 square miles, equaling in area the old States of Massachusetts, Connecticut, and Delaware combined. In this county is the Yellowstone National Park, described elsewhere in this report. Stock raising, coal mining, agriculture, and the manufacture of lumber are the principal industries. The altitude ranges from 5,000 to 8,000 feet and the climate is good. The soil is rich and very productive. This county is well watered by the Bear, Green, Salt, and Snake Rivers and their numerous forks and tributaries. The flow is rapid, furnishing good water-power for mills and factories and water for irrigation. Timber is abundant on all the mountains for lumber, fuel, and mining purposes. Perhaps more lumber is manufactured in this county than in any other in the Territory. The supply of coal in Uinta is practically inexhaustible. It exists in veins of from 4 to 40 feet thick. Oil springs have been discovered here, from which are constant though small flows of oil. The Union Pacific crosses the county in its southern portion and the Oregon Short Line in the south central portion. The Pacific Short Line has also a survey through the county. In addition to coal and oil, gold, silver, lead, asphaltum, asbestos, gypsum, kaolin, iron, etc., are found, but are undeveloped. Cattle, sheep, and horses do remarkably in this county, and trotting horses are produced equal to the famous stock of Kentucky. Many first premiums for racing in adjoining States and Territories have been taken by Uinta horses the present season.

The City of Evanston.—This city is the county seat, has a population of over 2,000, and is one of the most prosperous and promising towns in the Territory. It is pleasantly situated in the Bear River Valley, with many natural advantages. It is the home of wealthy cattlemen, mine owners, and bankers, and is improving very rapidly. The Union Pacific shops, located here, employ a number of skilled mechanics. The city has two banks, two newspapers, five churches, good school-houses, electric-light plant, water-works, and other improvements. The Territorial insane asylum is situated here, and also the United States land office for the Evanston district.

Almy, 3 miles west, has nearly as many inhabitants as Evanston. About 1,000 men are employed there in coal mining.

YELLOWSTONE NATIONAL PARK.

During the month of August last I visited the Yellowstone Park, spending a week in that wonderful region. While the Park is a reservation directly under the control of the General Government, yet it lies almost wholly within the boundary of Wyoming and is justly regarded with pride by all its citizens. I trust that some suggestions which have occurred to me in relation to the enlargement and preservation of the Park will not be unacceptable.

The Yellowstone National Park occupies an area reported as 61.8 miles long by 56.6 miles wide, in the northwestern corner of Wyoming, with the exception of about 2 miles which projects on the northern

border into Montana, and a strip of about the same width extending over into Montana and Idaho on the west. It can be described as a region of hot springs and geysers, mountains and cañons, lakes and waterfalls. The beauty and grandeur of its scenery are not excelled by any locality. Here are found the largest and most numerous geysers in the world. No less than seventy of these are active geysers, some of which throw up columns of boiling water and steam over 250 feet in height, while there are thousands of boiling hot springs in whose depths are reflected all the primastic colors of the rainbow. Besides the geysers are majestic mountains, beautiful lakes and rivers, with numerous cascades, rapids, and waterfalls. The Lower Falls of the Yellowstone are over 350 feet in height, and with its Grand Cañon are not surpassed by any scenery in the world. Differing from the splendors of Niagara or the Yosemite it is no less impressive.

Although exploring parties have at various times passed on all sides of this most curious region, its wonders remained undiscovered until 1870, and it was not until 1872, after the explorations of Dr. F. V. Hayden, that it was withdrawn from settlement and set apart for all time as a pleasure ground for the people. It is not strange that the Park remained thus unexplored, situated as it was on a plateau 8,000 feet above the sea-level, and surrounded on all sides by lofty mountains, the sides of which were covered with a dense growth of pine forests, and snow-capped summits 10,000 to 13,000 feet high. The only approaches to the Park were over these mountains, filled with fallen timber, or through deep cañons, whose precipitous heights and rushing rivers made them dangerous and well-nigh impassable. Having crossed the mountains or passed through one of the deep gorges, the surface of the Park is found to be undulating, and since roads have been cut through the timber the various points of interest are easily made accessible. The Mammoth Hot Springs, Norris Basin, Lower and Upper Geyser Basin, Yellowstone Lake, and the Grand Cañon and Falls of the Yellowstone are the principal points visited by tourists, and embrace a circuit of about 150 miles by stage or private conveyance.

Railroads, stages, and hotels.—The hotels in the Park are managed by the Yellowstone Park Association under certain restrictions of the Government. They afford comfortable accommodations at \$4 per day. Wagons, saddle horses, and guides can be obtained during the season at reasonable rates. The Northern Pacific Railroad sell excursion tickets from their main line at Livingston, Mont., into the Park and return, including hotel accommodations. The Union Pacific Railway also sell round-trip tickets to the Park via Beaver Cañon, on the Utah Northern Railway, from the west. The season in the Park is limited to between the 15th of June and the 30th of September. When parties desire to remain in the Park more than the limited times specified in their tickets, they should be allowed to do so. The present system of hastening people through is frequently very inconvenient, and could be better regulated. It is true, stop-over tickets or checks are provided for in the regulations of the Interior Department, but practically it is a dead letter, as no extra transportation is kept at intermediate points. The tourists are required to take the chances of securing room in following stages where a place is surrendered in the stage or wagon started with. As every vehicle is supposed to start out from the initial point with a full load of passengers, it can be readily seen that until a full load desire to stop over together, passengers can not take advantage of the stop-over privileges accorded by the Department regulations. If enough transportation service were provided by the Yellowstone Park Trans-

portation Company at all hotel points, it would accommodate reasonably well all tourists desiring to stop over.

There is also need, on the part of people of modest means, of cheaper hotel accommodations, but this I understand is to be provided for next season by the hotel company. It would also be a great convenience if there were places where supplies could be bought at reasonable prices by campers or persons visiting the Park. The hotels as now conducted in the Park are in the main very satisfactory, and if the transportation company showed less disposition to crowd and rush tourists through the Park there would be less cause for complaint. The company furnishes a good class of animals and vehicles.

The usual time spent by tourists in the Park is from three to seven days, but more than twice that time could be taken up in visiting the many places of interest. New objects are constantly being discovered that add to its almost endless attractions. A steam-boat to be launched next season in Yellowstone Lake will open up a score of places along a shore line 112 miles in length. This beautiful sheet of water of irregular shape is about 30 miles long, with an average width of from 12 to 15 miles. There are besides in this vicinity the beautiful Shoshone Lake and Heart Lake under the shadow of Mount Sheridan. It is in this vicinity that the Utah Northern (Union Pacific) has projected a road to be built in the near future, enabling tourists to reach the Park at its southern extremity. The National Park branch of the Northern Pacific is only 6 miles from the Mammoth Hot Springs, and the majority of visitors enter the Park at this point. From Beaver Cañon the distance is nearly 100 miles to the Lower Geyser basin through a beautiful mountain region that affords fine hunting and fishing just outside the Park. A stop may be made midway, at Henry Fork, a tributary of Snake River, a place that has the reputation of being a paradise for the huntsman.

Military protection.—Capt. F. A. Boutelle of the First U. S. Cavalry, now superintendent of the Park, has in his service two companies of cavalry, comprising 160 soldiers, one company being in command of Capt. P. S. Bomus. Through the courtesy of Captain Boutelle I have been permitted to examine his report for the fiscal year ending June 30, 1889, and I most heartily concur in the recommendations therein contained, especially his request for an appropriation of \$100,000 to clear up the fallen timber and prevent the destruction of growing timber.

The paramount need of the Park is more adequate protection against the spread of forest fires. Without it the vast timber area in and around the Park is in danger of being destroyed. Such a calamity would not only greatly detract from the beauty of the Park, but work incalculable damage to the streams that have their headwaters in this region. Everything has been done to prevent fires that the limited means at the disposal of the superintendent would admit of, but his efforts are likely to be fruitless unless the Government comes to his aid by liberal appropriations. The forests are full of fallen timber, and the recommendation that it be cleared away at least 100 yards on each side of the traveled roads is important. It is usual for campers to build fires on the roadside, and the taking away of this timber would remove one of the most frequent causes of forest fires. There should be provided rubber buckets for the Park guards that could be filled at the nearest streams or tanks conveniently located to extinguish fires. Another precaution would be to give the superintendent power to designate certain points for camping purposes.

Under the present circumstances the establishment of a military

headquarters for the purpose of protecting the Park is the best arrangement that can be made. The cavalry make excellent police for a domain covering over 3,500 square miles.

There should, however, be a larger force than at present quartered there, and I suggest that five companies instead of two could do better service in enforcing the regulations of the Park. It is my opinion, from information gained from tourists and also from personal observation, that the soldiers are disposed to be obliging and courteous towards all classes of persons visiting there. They appear to be interested in their work, and show commendable industry in protecting the formations, and, whenever necessary, extinguishing fires. With the small force on duty there at the present it frequently happens one soldier, in a single day, is obliged to be guide and escort to tourists, to act as police in preventing spoliation, and then at night to ride perhaps 20 or 30 miles, with shovel and ax, to prevent the spread of forest fires. No place in the Rocky Mountains affords a better location for a military station, and where, in times of peace, they could be more useful.

Civil authority and law.—The necessity of providing some means for punishing violations of law in the Park are very urgent, and the absence of such provision may be justly regarded as a reproach to the legislative branch of our Government. The violation of certain rules and regulations permit the expulsion of persons from the Park, but in some instances crimes of the most serious nature go unpunished for the want of any tribunal to take jurisdiction.

The report of the House committee on Senate bill No. 283, pending in the last Congress, but not passed, states:

The machinery provided by the act for the administration of justice within the Park is simple and inexpensive, being substantially the same as that contained in the act which passed the Senate at the last Congress, but involving much less expense. It involves only the appointment of a local magistrate, who shall reside in the Park, and who shall try all violations of the rules made for its preservation. Indictable crimes may be tried in the district court of Wyoming, and the Park magistrate is invested with the power of arresting persons committing such crimes and have them conveyed within the jurisdiction of the Wyoming court.

An offender can be escorted by the military force out of the Park for defacing the formation or any spoliation of the natural curiosities, but for murder, or theft of private property, there is no civil magistrate to act, and a perplexing problem is met.

Enlargement.—I most fully agree with the same report (House report No. 3071, to accompany Senate bill No. 283), recommending the extension of the Park $9\frac{1}{2}$ miles southward and some 15 or more miles eastward. The reasons given in the report of the House committee from which the following quotation is made, are worthy of consideration:

The enlargement of the Park by this bill is about 1,600 square miles. The entire country is absolutely useless for agricultural purposes and is barren of mining resources, while the geological structure of the region renders it almost certain that no mineral of any value will be found within the proposed additional area.

The object of first importance in maintaining the Yellowstone Park, from an economic point of view, is the preservation of the forests which now cover the Park plateau and the adjacent mountains. The maintenance of timber near the headwaters of the large streams of the country is everywhere attracting attention, and it is now very generally admitted that certain restrictions in the removal of forests is demanded by the public welfare, and deserving the consideration of Congress.

The area of country which it is proposed to add to the Park is singularly well adapted for the storage of water. No region in the northern Rocky Mountains possesses the same favorable conditions for receiving and distributing a magnificent water supply. For the preservation of this water in this natural reservoir the dense timber which covers the region is of immense value.

The country on the east side of the Park is a high mountain range, with an average

elevation of over 9,000 feet, from which rises numerous peaks, from 10,000 to 11,000 feet above sea level. It is an exceptionally rough and rugged country, and one of the most inaccessible regions in the northern Rocky Mountains. It has always been an effectual barrier to the progress of immigration westward, all travel passing to the north or south of this range. Notwithstanding its uselessness for settlement, it is, owing to the timber and abundant water supply, a most valuable inheritance of the nation. The belt of country lying to the southward of the present Park boundary is for the most part volcanic in its origin, and, while less rugged than the mountains to the eastward, is a wild, broken country, equally unfavorable for agricultural or grazing purposes. This proposed addition to the Park abounds in numerous large streams and lakes, the sources of the Columbia and Yellowstone, the waters running to both oceans. Unless protected by national legislation it will soon be despoiled of its timber.

The following extract from an article recently published by Mr. Arnold Hague, of the U. S. Geological Survey, points out clearly the value to the nation as a game preserve:

The present limits of the Park are far too small for a satisfactory game preserve, if it is intended to make the place one where large game will naturally roam, particularly when driven from outside for protection. The proposed extension of the Park will take in an area of country abounding in wild game of all kinds. It is a favorite resort of deer, elk, bear, and mountain sheep. The country immediately south of the present southern boundary abounds in sheep and elk. It is a favorite breeding place of the latter, thousands of cows and calves being found here throughout the summer. By adding this area to the Park and rigidly enforcing the game laws the whole country will soon abound in nearly all species of game found in the Rocky Mountains, and will soon become so densely stocked that the surplus, seeking new haunts, will run outside the Park limits, affording abundant sport for the true hunter.

Location of hotels.—The large hotel at Upper Geyser Basin is quite near the Old Faithful Geyser, probably about half the distance required by law or regulation. There is no visible reason why an exception should not be made and this hotel allowed to remain. It is not upon or near the formation so that there can be no possible danger. The hotel is located on a high level that forms a natural terrace to the country below. It is a perfect location, and the only one available in that vicinity. To be compelled to remove it to the requisite distance, would not only be a great inconvenience but a misfortune.

Fish.—Many of the lakes and rivers of the Park are peculiarly adapted to fish culture. Col. Marshall McDonald, United States Fish Commissioner, who visited the Park this season, appreciates the great advantages which it possesses as breeding grounds for stocking the headwaters of the Missouri and Snake Rivers; and I am informed will recommend the location of a fish hatchery in the Park. There are but a limited number of native trout and salmon now in the Park, and such an establishment would be the means of adding to the varieties of fish, besides stocking streams that are barren. The operations of the hatchery would also be of interest to a large class of visitors.

Boundary marks.—The boundaries of the National Park should be not only established but plainly marked, so plainly that every one in crossing the line from any direction might know when they were within the legal boundaries. This information is necessary to enable people to observe the law about killing the game and also to those who guard the Park from within. If an opening through the timber along the entire line could be made, it would plainly mark the boundary and act as a safeguard against the spread of fire. While many open places occur, the openings made in the timber adjoining would be sufficient to indicate the line, or if stone monuments could be erected in the open fields. If this system can not be adopted, a wire stretched on poles would make a plain boundary and at the same time serve as a line for telegraph or telephone messages.

Reimburse Wyoming.—The Territory of Wyoming, realizing the importance of exercising a protecting care in the Park and owing to the lack at that time of proper laws and regulations on the part of the National Government, passed laws in 1884 providing for the selection of special officers, the building of a jail, etc., to protect the Park and punish offenders. A sum aggregating over \$8,000 was appropriated and expended to carry the law into effect and assist the Government in maintaining law and the Park from spoliation. The Territory's efforts in this direction were valuable at the time, and I recommend that Wyoming be reimbursed for the amount expended.

Value of the Park.—From personal observation and assurances received from a large number of those who have visited the great scenic resorts of the world I am convinced the Yellowstone National Park is unrivaled in this country or abroad. No language can give an adequate description of this most remarkable region; it must be seen to be appreciated. As the fame of the Park is destined to spread, the number of visitors from all parts of the world will increase from year to year. The Park is surrounded by a country that is thinly populated, but that country is rich in undeveloped resources, and only needs the acquisition of additional brains and capital to make it wealthy and prosperous. Travelers who visit the Park come from all lands, and are among the most intelligent and wealthy people of the age, and the benefits which this class of people, possessing capital and intelligence, can confer upon this undeveloped surrounding country that they must become acquainted with in passing through are incalculable.

Thus the Park becomes of pecuniary value to the nation, and especially to the great undeveloped West.

Conclusion.—I can not dismiss this subject without urging in the most earnest way immediate action on the part of the Government to protect and preserve this most wonderful resort. The exigencies of the case require action and the expenditure of considerable money now without delay. Extensive forest fires would endanger the locality beyond reparation for years to come.

RECOMMENDATIONS.

In concluding this report permit me to again refer to the subjects hereinbefore discussed, and in that connection to respectfully and earnestly submit the following suggestions:

Statehood.—That Congress at its coming session pass an act providing for the admission of Wyoming as a State.

Surveys and public lands.—That largely increased appropriations be authorized for surveys in Wyoming, and that provision be made for resurveying erroneous and imperfect surveys.

That authority be given for surveying agricultural, grazing, mineral, and timber lands together rather than limit the survey to actual agricultural lands. The last often being in small bodies, contracts for their survey can not be let under the terms of late appropriation acts, and actual settlers suffer in consequence.

That the abandoned military reservations of Forts Sanders and Fetterman be opened for settlement or sale, preferably the former.

That the United States donate to Wyoming arid lands to enable her to secure their reclamation—this to be done in lieu of the swamp lands granted to other States.

That Congress appropriate money sufficient to cover the expense of

selecting lieu lands in place of those heretofore appropriated for other purposes.

That the Land Department without delay approve of the selection made by Wyoming of 72 sections of university lands, so that the University may lease them under existing laws.

That more liberal provisions be made for mill men desiring to manufacture lumber from timber on public lands.

That some plan be adopted for the control and prevention of forest fires on the public domain.

That more public land offices be established and maintained in Wyoming.

Storage reservoirs.—That Congress take early action to secure the full utilization of the waters of our mountain streams and the retention in storage basins of the water now running to waste.

Pacific railroads.—That some arrangement be made with the Pacific railroads to secure the Government and at same time enable the railroads to proceed with the construction of branch lines.

Indians and Indian reservations.—That authority be expressly given for the taxing of the property of white men when located on Indian reservations; that the Territorial courts be authorized to try and punish white men for offenses against Territorial laws when committed on an Indian reservation; and that the Indians be required to remain within their reservations.

Mail facilities.—That the mail facilities in Wyoming be greatly extended and expedited.

Judges of the supreme court.—That four justices of the supreme court should be provided for Wyoming, instead of three, as at present; first, because the field is a large one, litigation is growing with the increase of population, and the labor of the judges is steadily increasing; second, because, in case of appeal to the supreme court of the Territory, the judge sitting on the case below must now again sit in judgment upon his first decision, while, were there four judges, three of them could sit in the supreme court, none of whom had before considered the same case.

Deep harbor.—That Congress provide for a deep harbor on the Gulf of Mexico.

Yellowstone National Park.—That a regular military post be established and better quarters be provided for officers and men.

That the military force in the Park be increased so as to afford greater protection, especially against forest fires.

That \$100,000 be appropriated to clear away the fallen timber in the Park, since the forest fires originating in the same do great damage and disfigure the natural curiosities.

That the Park be enlarged on the west and south, since this will tend to preserve the forests and thereby increase the summer supply of water for the headwaters of the great American rivers, and will also insure a better game preserve.

That the boundaries of the Park be clearly marked and defined, so that the place of the commission of crime may be more readily ascertained.

That adequate provisions be made for the punishment by civil authority of violations of law in the Park.

That a Government fish hatchery be established in the Park for the stocking of barren streams.

That appropriations of money and the expenditure of the same for the preservation of the Park be arranged for without delay.

That the Territory of Wyoming be re-imbursed in the sum of over

\$8,000 expended by that Territory in protecting the Park prior to March, 1886.

That the distance allowed between geyser formations and the location of hotels be lessened, especially with reference to the hotel at Upper Geyser Basin. .

That the transportation company in the National Park be required to provide transportation service at all hotels to enable tourists to avail themselves of stop-over privileges.

That places be established in the Park where supplies can be bought by campers and others.

I am, sir, very respectfully, your obedient servant,

FRANCIS E. WARREN,
Governor of Wyoming.

Hon. JOHN W. NOBLE,
Secretary of the Interior.

PART II.

WYOMING EPITOMIZED.

Wyoming will be in size the eighth State in the Union. It is more than ninety-seven times the size of Rhode Island.

Statehood.—The Territory desires statehood, and having nearly 100,000 square miles of area, 100,000 population, \$100,000,000 of wealth, and extensive undeveloped resources, the people are entitled to the full benefits of State government.

Excepting coal, the mineral wealth of Wyoming has been but slightly developed. The extension of railroads now being built and projected will early bring about great changes and rapid development.

About 30,000 square miles of the Territory is underlaid with coal.

Wyoming will perhaps become more noted for her oils than any other product. Oil is found in large areas, some of the basins reaching 30 by 150 miles.

Mountains of iron and generous deposits of gold, silver, copper, lead, mica, cinnabar, tin, sulphur, soda, salt, borax, asphaltum, gypsum, graphite, magnesium, asbestos, kaolin, and mineral paint are found; also marble, sandstone, limestone, granite, slate, and other decorating and building stones.

The mineral wealth of Wyoming is more than sufficient to pay the national debt, as will be demonstrated by future development.

Natural gas is believed to exist, but no considerable discovery has yet been made.

Brick clay exists in all parts of the Territory.

One hundred and fifty thousand horses and mules, 1,500,000 cattle, and 1,250,000 sheep graze on the ranges of Wyoming.

Nutritious grasses, curing where they grow, furnish abundant food for both domestic animals and wild game.

Irrigation is largely depended upon to raise farm products, yet small grains, grasses, and vegetables are raised without irrigation over a very considerable area. With irrigation alfalfa makes from two to four crops a year, and grains and vegetables make a phenomenal yield.

The Union Pacific Railway runs nearly 500 miles through southern Wyoming. The Denver Pacific branch runs south from Cheyenne; also the Colorado Central. The Cheyenne and Northern runs north from Cheyenne. The Oregon Short Line runs northwest from Granger, in the western portion of the Territory. The Fremont, Elkhorn and Missouri Valley Railway extends nearly 200 miles from the eastern border to the center of the Territory. The Burlington has a complete line to Cheyenne, and has a line graded, about receiving iron, in the northeast portion of Wyoming. The Wyoming Eastern will traverse the entire Territory from east to west, and many other projected lines and branches are reported in progress.

The climate of Wyoming is cool in summer and mild in winter, with

but few snow-storms, which are usually accompanied by wind, preventing a complete covering of the ground. While subjected to occasional heavy snow-falls, the average winters are neither severe nor long. We have few cloudy and many sunny days, and it is healthful in the highest degree.

The many rivers of Wyoming, with their numerous branches, water very large tracts of land, and also furnish food fishes.

Wild game abounds in nearly every portion of the Territory, and its wanton slaughter is prohibited by law.

A very large portion of the public lands are yet unsurveyed, and much of that surveyed is still unoccupied.

There is room for all, either in agricultural pursuits, mining, stock raising or other business.

The birds of Wyoming include over one hundred and twenty-five species.

Yellowstone National Park is nearly all within the borders of Wyoming. Its scenery and its wonderful freaks of nature are unequalled in the world.

Business in Wyoming is generally prosperous notwithstanding the present low price of the cattle product.

There are thirty-one newspapers printed in the Territory, four of them dailies.

The people of Wyoming are of high average in education and general habits. The early settlers came from nearly every part of the world, but later they came chiefly from the Eastern and Southern States.

Public schools are maintained throughout the Territory, and teachers are carefully selected.

The church edifices are very numerous, and many of them are costly and of high order of architecture. They are very generally attended.

The laws of Wyoming are good, and generally applicable to the country, and the people are law abiding.

No fatal contagious diseases exist among live stock, and the Territory constantly employs an efficient veterinary surgeon to prevent the dissemination of disease, and quarantine laws and sanitary regulations are maintained.

The Territory created the office of mining inspector to secure the safety of men employed in coal and other mines.

The office of Territorial geologist is maintained to encourage the development of mining.

The office of Territorial engineer provides a skillful official, whose duties are to encourage, superintend, and control irrigation.

The Territory has a fish hatchery for the purpose of stocking streams not already provided, and a competent fish commissioner is in charge.

The social status of Wyoming is excellent. Societies, literary, social, secret, and others, are well represented and satisfactorily supported.

Wyoming has a law library of 15,000 volumes, and other public libraries are found in the larger towns.

The flora of the Territory comprehends, in addition to flowering plants, large varieties of grasses, and some sixty species of mosses, lichens, and various species of tree flora, the latter more fully described under the heading of timber and lumber supply.

The fauna of Wyoming is extensive in its genera and species. Perhaps no State or Territory excels in this. Some fifty species of food-fishes abound in our water-courses and lakes.

Some thirty species of mammals abound, including game animals.

Wyoming now has a population more than double that of either

Alabama, Missouri, Ohio, Oregon, Illinois, and some other States, when admitted.

Women's suffrage, first adopted in 1869, is favored by both political parties.

Wyoming is becoming noted as a resort for those in search of health and strength and the highest physical development.

The Indians of Wyoming are not warlike, and efforts are being made to educate them in farming and other industrial pursuits.

The mail service is fair, but in many localities more mail routes and better facilities are needed to accommodate the inhabitants and to assist in developing the Territory.

Financial standing in the Territory—public, private, and corporate—is high.

There are two companies of Wyoming National Guards, already organized and equipped.

Wyoming has one county, Fremont, with an area equal to that of Massachusetts, New Jersey, Delaware, and Rhode Island combined.

The coal area of Wyoming is twice as large as that of Pennsylvania.

The mineral paint of Wyoming is the best ever used on bridges, roofs, and other structures exposed to the elements.

The people of Wyoming have \$10,000,000 invested in irrigating canals, ditches, and reservoirs, which is not included in the assessed valuation of the land on which the same are located.

The high mountain ranges of the Territory shield its valleys from the severe blizzards so common in some of the Western States and Territories.

The scenic features in Wyoming are remarkable. Meadows and great natural parks are encircled by lofty and majestic snow-capped mountains, their sides covered with forests, innumerable streams, great water-falls, and extraordinary and fantastic rock formations, and other grand and beautiful scenery.

The census of 1880 shows that Wyoming has the smallest percentage of illiteracy of any political division of the United States. The people are generally young, vigorous, industrious, and of high character.

Wyoming has provided laws for free county libraries and a small tax is levied for their support.

The secretary of the Territory will forward information in printed form to those seeking new homes in the West.

Wyoming has a Territorial agricultural fair and a number of county fairs.

Rain-fall in Wyoming averages on the plains about 14 inches; on the mountains perhaps three times as much.

There are twenty banks in Wyoming.

Interest rates are from 6 per cent. to 12 per cent.

Live stock and mining industries furnish an excellent market for all kinds of produce.

Wyoming public buildings comprise the capitol, university, fish hatchery, penitentiary, poor farm, asylum for deaf, dumb, and blind, and asylum for insane.

The cities and towns of Wyoming have a high class of municipal buildings.

Our undeveloped resources are abundant and very promising, simply needing brains, money, and muscle.

Wyoming has several telephone exchanges and fair telegraphic advantages.

Women's suffrage, conferred in 1869, is recognized and established in the proposed constitution.

Under the present administration all appointees of the Territory have been bona fide residents.

Representatives met in convention and adopted a constitution for the proposed State of Wyoming.

In 1886 the total acres of land assessed was 394,789, in 1889 it is 5,868,370.

Wyoming has already 1,000 miles of main trunk line of Union Pacific Railway, Chicago and Northwestern, and Chicago, Burlington and Quincy, but needs more.

The mean altitude is about 6,000 feet, ranging from 3,000 to 14,000.

Wyoming has numerous advantageous sites for the easy construction of large storage reservoirs.

The Territory produces annually a large amount of hay. Small grains do remarkably well.

The soils of Wyoming are generally rich, the only fertilizer needed being water. The sage-brush districts raise good crops when subjected to irrigation.

Four-fifths of the counties in Wyoming have substantial and commodious brick or stone court-houses.

Wyoming is the youngest of the Territories. It is 275 miles north to south and 369 east to west, forming a parallelogram.

School-houses and school property in the Territory are worth \$1,000,000. The Territorial public buildings have a value of \$500,000.

Wyoming has a compulsory school law, and the teachers are carefully selected.

Heavy forests cover over 7,000,000 acres of Wyoming, and there are about 15,000,000 acres having more or less timber.

School and university lands are rented in Wyoming and rental applied to support of public schools.

A valuable paper prepared by Dr. L. D. Ricketts, Territorial geologist, is in this report.

Wyoming cast a vote of 18,010 in 1888. The next vote will be much larger.

The streams of Wyoming furnish water enough to irrigate 18 to 20 per cent. of its area.

Wyoming has 600 streams already used to some extent for irrigation, and a great many more from which no ditches have been taken.

The number of recorded ditches is over 2,600, and there are more than 5,000 unrecorded.

The total length of irrigating ditches is over 5,000 miles.

Wyoming votes in favor of the Government assisting in establishing a deep-water harbor in Texas, on the Gulf of Mexico.

IRRIGATION A NATIONAL MATTER.

In September of this year the United States Senate Committee on Irrigation were at Cheyenne, the capital of the Territory, and the Constitutional Convention being in session, the committee were able to meet representative men from all sections of Wyoming. An adjournment of the convention was had in order to facilitate the taking of testimony regarding irrigation by the Senate committee, and it is believed much valuable data was collected.

Wyoming's competent and experienced Territorial engineer, Mr. El-

wood Mead, was in attendance, and among other documents submitted the following paper :

REPORT ON THE IRRIGATION OF THE ARID LANDS.

ENGINEER'S OFFICE,
Cheyenne, Wyo., September, 1889.

GENTLEMEN: As the official head of the irrigation systems of this Territory, I have the honor to present to you this statement describing its agricultural resources and possibilities by the aid of irrigation, the character and extent of the work already performed, and of explaining the views of our people as to the measures necessary to secure the full utilization of our water supply in reclaiming the unoccupied arid lands.

Among the arid commonwealths Wyoming stands the third in the extent of her irrigated land, while in the excellence of her laws and the legislative measures for the promotion of this interest she deserves even a higher rank. Although the youngest of the Territories and suffering greatly from the lack of railroad facilities, particularly between the agricultural districts of the north and the mines of the south, only California and Colorado surpass her in the mileage of canals or the area of land watered therefrom. This rapid development has been due to two causes, the first being the exceptional natural advantages of the Territory as a grazing region, and which at an early date made the raising of cattle its most important industry. With the cattle-men to open the way and make settlement possible, the farmer soon followed. And as the necessity for winter feeding to weaker stock became apparent, the profits of the cattle business were invested in the construction of ditches to enable such food supplies to be grown.

The second reason is found in the abundance of the water supply and the ease and cheapness with which the waters of the streams can be diverted. The description of these streams and the nature of the works already built to divert their water is given in Appendix A attached to this report. It will be sufficient here to state that the principal streams have their sources in mountains of sufficient elevation and extent to make them abundant accumulators and conservators of the needed moisture, and that from these natural reservoirs these fruitful arteries of our agricultural life penetrate every section of our broad area. No other arid State or Territory equals this in the number of its streams whose waters can be diverted or in the uniformity of their distribution over its entire area. The location of the natural water-courses is such that if they carried sufficient volume of water all the lands could be easily and cheaply watered, while on the other hand there is but little land which would not be made productive if the water could be had. Hence it is that no subject has to this Commonwealth the same ultimate importance as the proper conservation and use of all water that falls on its surface.

The solution of the problem of how best to accomplish this involves an inquiry into two matters: First, the proper distribution of the water over the land, and, second, the conservation and storage of the flood water and the water running to waste in the non-irrigating season. In considering these questions regard must be had to the works already built and to the methods adopted and in practice among the farmers of the Territory, since no methods can be successfully carried out which do not accord in a measure with the views and interests of those already in the work. While the area irrigated is far less than that awaiting reclamation, it is too important to be lost sight of in any plans for future work. The ditches now in operation and the acres of land which they water have involved the outlay of many millions of dollars of the earnings of our citizens. When they began their work the success of agriculture by irrigation was problematic. It was through their confidence and energy that the country now understands and appreciates its value and importance, and it is their efforts which have given the arid region whatever value it has; hence no action should be sanctioned which does not promise to promote the financial success and prosperity of the works already constructed. While the northern part of the Territory has outstripped all other portions in the extent and value of its irrigated lands, in all sections the construction of ditches has reached a surprising degree of importance, and there is no portion in which the agricultural lands do not form an important part of the natural resources.

Much of the work done is faulty, resulting in heavy and unnecessary expenses for operation and maintenance and great loss of water in distribution. We have too many small canals watering the bottoms and not enough large canals watering the uplands. Our methods and systems need reforming to prevent this in the future work. It is the result in part of the lack of means and experience on the part of the pioneer ditch builder, but very largely of late years of the unfortunate circumstances of our land laws being wholly unsuited to the conditions of this region and of their administration being in the hands of men ignorant of these facts.

It is a well-settled principle that lessening the number of ditches by building large high-level canals results in both economy of water and saving in operating expense. It also, as a rule, secures the watering of more fertile and productive land. To build large ditches, however, requires either a community of efforts on the part of the farmers owning the land or the introduction of capital to build canals to rent water. The first plan has seldom been successfully pursued. The length of time required to prepare for and complete the construction of a large canal, and the fact that farmers can produce nothing to support themselves or their families until this is accomplished has prevented its successful adoption. Hence the majority of the large irrigation works have been built as common carriers of water, this plan seeming to best meet our conditions and needs. There is no objection, so far as I am aware, and many things in favor of this plan, provided the canals are properly built and furnish water at a reasonable rental. They are a necessary and valuable feature of our irrigation development, and we should have such laws as will make the investment a safe one and secure their construction under such conditions as will enable them to furnish water to farmers at a minimum cost.

Unfortunately, however, the building of large canals to furnish water to the settlers on the public lands gives rise to a condition of affairs which, while well understood here, is apparently not appreciated elsewhere. Before the canal is built these lands are valuable only for grazing purposes, which value in most cases does not exceed 50 cents per acre. The construction of the canal, however, carries with it the assurance of their reclamation, enhancing their value to that of farming lands; so that, without the purchase of a water right, or without the owner of these lands having in any way contributed to their improvement, their value is increased, at a low estimate, from \$5 to \$15 per acre. This unearned increment is due entirely to the expenditure and efforts of the ditch company, which expects its returns from the rentals of water to the settlers on the lands thus made susceptible of cultivation. If therefore all filings under the ditch were made by persons expecting to become cultivators of the soil, and who would at once become users of the water, no harm would ensue.

Unfortunately, however, our land laws make possible an entirely different result. The increase in value resulting from the construction of the ditch is a rich field for the speculator. Parties having no desire or intention of becoming farmers can through the pre-emption law, the homestead law, and the timber-culture law, obtain possession of 480 acres of this land without having to rent a gallon of water from the ditch company, or in any way contribute to its maintenance or advantage. By the expenditure of 25 cents per acre they can in the same way obtain a three-year option on 640 acres additional by desert entry. Thus it is that over a thousand acres of land are withdrawn from honest settlement, and the speculator or entryman is in a position to blackmail the ditch company, as it is only by its buying him out and disposing of these lands to bona fide farmers that it can derive any income from the water supply. This situation of affairs has made it impossible in this Territory to construct large ditches simply as common carriers of water. The success of the enterprise makes it necessary that the lands should at once be brought under cultivation, and to accomplish this there must be some control over their settlement. This neither the ditch company nor the Territorial authorities can attempt at present.

There are in the Territory a number of important canals built to rent water, and all have suffered from the difficulty of securing a prompt settlement of the land reclaimed. Some of these have endeavored to protect their investment by securing this control of the lands, the most important instance of this being the Wyoming Development Company, its field of operation lying about 90 miles north of this city. It began originally with the intention of furnishing water to the farmers, but it soon became manifest that unless they could control the settlement of the lands the only parties to derive any benefit from their efforts would be the parties filing on the land, and that if the lands were to be actually made productive they must take steps to control their settlement. This was done, and in this work and in the construction of their canal about half a million dollars was expended. The enterprise has been in every respect a most praiseworthy one. Over 50,000 acres of land have been watered by one of the best systems of canals to be found anywhere in the arid regions, yet owing to the lack of appreciation of the real situation of affairs, and of the necessities of this region, these lands lie idle and unproductive in the hands of the Government, and the projectors of one of the best enterprises yet inaugurated in this Territory have been put to the expense and annoyance of maintaining for five years a system of costly and unproductive irrigation works.

The unfortunate outcome of this company's operations has been in the widest sense a disaster to the Territory. Its example is a menace and a virtual barrier to the inauguration of other enterprises of special magnitude, and has resulted in a return to the original practice of building small ditches where each individual could manage and control his own claim, the opportunities presented for the diverting of water making possible an extraordinary development of this nature. The evil consequences of this state of affairs are many. It creates a system difficult to control,

expensive to operate, and wasteful of water. Not only that, but many of our best lands can only be reclaimed through the medium of extensive and costly works. If during the past five years we could have had a system of land laws that would have enabled ditch companies to have secured actual settlers on the lands reclaimed, the number of important irrigation works and the extent and wealth of the irrigated territory would be fourfold that which exists.

A proper utilization, however, makes it desirable that additional changes, besides reforming our land laws, should at once be made. Since the area of land which can be irrigated is greater than the available volume of water, it is desirable that our irrigation works should be so located as to serve the best of these lands and that the water supply should be so distributed as to insure the utmost economy in its use. To do this it is necessary that a careful examination of the streams be made in advance of irrigation construction, and that these works should be built in accordance with an intelligent system and plan. It is further to the interest of the State that this should be done, since it is charged with the responsibility and expense of supervising these works after they are built and with the division of the water among the various claimants. Under the hap-hazard system which has heretofore prevailed, where there has been no limitation or supervision as to the number, location, and character of the works for diverting water, it becomes a practical impossibility to secure a just or satisfactory distribution of the water supply in a time of scarcity.

The ill results of this policy become more prominent the longer it is pursued. They are more notorious in Colorado than with us, and will be felt here in ten years far more than at present. It is a counterpart of the old land system, or lack of system, which formerly prevailed in this country and in some of the Eastern and Southern States, where each settler blazed out his domain according to his inclinations regardless of the boundaries or rights of his neighbors. The litigation and ill-feeling which followed as a legacy of this practice in Kentucky and other States promises to be repeated in our water-right troubles if some more enlightened policy be not adopted. That our system is what it is is not due to the lack of appreciation of its defects on the part of our people or the want of knowledge of a remedy. It is a system forced upon us by necessity, not choice. A Territory sparsely settled, with its resources undeveloped, was not in a situation to undertake any systematic public improvement or investigations, nor can we accomplish anything satisfactory towards this end with the public lands owned and controlled by the General Government. It is useless to make an investigation or examination as to the proper location of irrigation works while no control can be exercised over the settlement of the land.

The most satisfactory remedy for this state of affairs, and in my judgment the only efficient one, is for Congress to grant to each State of the arid region, or to each Territory upon becoming a State, all the irrigable lands within its borders held by the General Government, such State to be charged with the supervision of their reclamation and with their disposal to actual settlers.

The reasons for asking this donation were stated in a letter prepared by a committee appointed at a conference held in this city in July last, and I can do no better than repeat them here:

“First.—The reclamation of the lands of this region lays upon the people engaged and upon our local or State government requirements and expenses not encountered by the pioneer of the humid portion of the country. Not only does the construction of ditches and other distributing works add greatly to the first cost of a farm, but with their multiplication comes the necessity of the State assuming control of the distribution of the water supply, and its failure to do so leads inevitably to expensive litigation or to personal controversies which impair both the success and growth of our agriculture. A further incentive to prompt action is the fact that the area of land susceptible of reclamation exceeds the amount of water supply. The water, therefore, possesses a greater value than the land, and on its economical distribution rests the limit of our future agricultural wealth. It is of the utmost importance, therefore, that no wasteful or improper diversion be permitted, and that the State should control the appropriations of water as well as its subsequent division among the various claimants. The expense of this work must of necessity be heavy.

“In Wyoming there are already 2,500 ditches drawing their supplies from 400 water-courses, and this work is yet in its infancy. In Colorado, with its greater advancement, the single work of regulating the division of the water supply requires the employment by the State of nearly 100 men. This regulation is a necessity not to be avoided, but the preliminary examination of our streams and an efficient supervision of the construction of works to divert the water therefrom is of equal importance to our future welfare. In our present condition it will, however, be practically impossible for many of the States and Territories to provide means for this work by taxation, but the funds for its prosecution can be easily provided for in the disposal of the lands whose donation is asked.

“Second.—Our experience during the past five years has shown the evil growing out of the control of the lands being under one authority and the water under another.

"If this Territory could during the past five years have controlled the disposal of the irrigable lands within its borders, it could, while disposing of it to actual settlers only, have afforded such protection to canal companies as would have given our agriculture four times its present importance, and more than double our population. Instead of this there have been repeated instances where arbitrary and unreasonable rulings have subjected our people to heavy and wholly unnecessary expense, and to cause the whole land policy to be regarded as oppressive. It was, however, the inevitable result of land laws wholly unsuited to the needs of irrigation and of their enforcement by officials in Washington whose experience had not prepared them to deal with the conditions which exist here.

"It is also impossible for Congress to pass a general law which will operate with equal justice and success on the arid belt as a whole. The conditions differ in the different sections, as do our water laws. Wyoming differs from Utah, and Arizona from Montana or Idaho. The people of each section are the best calculated to determine the system best suited to their needs and should be given the means of carrying it into effect.

"*Third.*—The results already achieved are a sufficient guaranty of what can be accomplished under favorable circumstances. Our legislation as to water has, on the whole, been wise, but it can never have the stability or success which would come with the control of both land and water. Our engineering works have elicited the praise of experts from other irrigated countries for both their economy of construction and adaptation to their use. At present the practical knowledge of the subject is almost wholly confined to those engaged in the work. The information gained through the labors and investigations of the Geological Survey can be utilized by local legislatures, while by placing the responsibility for this work upon our people a great impulse will be given to the diffusion of intelligence on the subject and to local pride in the character of our irrigation works. It will put the solution of this problem in the hands of the people best informed on the subject and most interested in its success.

"We will say further that our people are afraid of the proposed withdrawal of the irrigable lands from settlement or the placing of the construction and control of our irrigation works under the charge of the National Government; the reason being in both cases that the delay and uncertainty which would be inseparable from such action would be disastrous. While the passage of laws to encourage individuals or companies to reclaim large bodies of arid lands would most speedily accomplish the desired end, namely, reclamation and settlement of the arid regions, yet public sentiment seems to be so adverse to this plan that we feel that it is scarcely worth our while to advance it."

The dangers attendant upon national legislation is shown in that clause of the law creating the irrigation survey which provides for the repeal of all land laws except the homestead act. This clause has met with the disapproval of all persons acquainted with the situation in this Territory. To limit the acquirement of title to the public lands to the provisions of the homestead act would be disastrous restriction on settlement, and there is no valid reason for its adoption. It offers no aid towards the construction of better works or the more economical diversion of water, the most important consideration connected with the whole subject. In this respect the desert-land law was the best ever enacted, if it had been liberally construed, or if the rulings of the Land Office had been uniform as to its meaning. The difficulty has been that the changes in the rulings have been of so radical a character as to practically constitute new legislation and to cause much hardship and expense to those honestly endeavoring to comply with the law. So onerous have been some of the restrictions that it has seemed as though the authorities regarded every claimant of the public lands as an object of suspicion who was guilty until proven innocent. It is time that a more sensible and just conception prevailed.

Every settler on these lands, which in their present condition have no agricultural value, and who reclaims them and makes them productive, is a benefactor of the whole country and should receive the most liberal treatment. Instead, however, after having expended from \$5 to \$15 per acre in bringing the water on his land and preparing it for irrigation, he is compelled to pay the same price therefor that the settler on the broad prairies of Iowa and Kansas paid for land already prepared for the plow. The commonwealths who are charged with the duty of guarding the public welfare should be aided in their efforts. Every consideration which justified and secured the donation of the swamp lands to the States of the humid region applies with greater force to the advisability of a similar donation of the arid lands to the several States and Territories interested. Not only are our local governments charged with heavy duties and responsibilities which none of the humid States had to confront, but the settlers who come here to engage in farming undertake the practice of an art whose mastery is both complicated and difficult and of which they have no previous experience.

Our climatic conditions are exceptional, making much of our agriculture and ex-

periment, and making certain that we are far from pursuing the best methods, or that we are achieving anything like the results which are possible. The local government should aid private effort by conducting experiments to determine the best methods and by disseminating information which will enable new comers to obtain their knowledge of the subject by some less difficult and costly road than that of experience. The success of irrigated agriculture enormously increases the value of the arid domain and will be an important contributor to our national wealth and prosperity. The best results can only be secured through the nation's aid. I trust it may be generously extended.

Respectfully submitted.

ELWOOD MEAD,
Territorial Engineer.

The SENATE COMMITTEE ON IRRIGATION.

WYOMING MINES.

The following is from a paper written by Dr. L. D. Ricketts, Territorial geologist:

THE WYOMING COAL FIELDS.

The Wyoming mines along the Union Pacific Railway now produce over 1,400,000 tons of coal annually, and the owners are actively preparing for a much larger output. The situation of these mines and their connection by railroads of easy grade compared to many of the Colorado lines, enable them not only to supply the large market west and east along the main line and its connections but allow them to send coal south into eastern Colorado, southern Nebraska, and northern Kansas, and for this reason there is room for a large expansion of their trade. But with the exception of a part of Montana they can never have a natural market in the district lying between the 95th and 115th meridians and north of the 42d parallel unless the region to the north of the railroad limits fails to supply good coal.

The demand for a cheap fuel in this region is constantly increasing, and has finally become so imperative that its supply will warrant a large outlay of capital. With the extension of the railroads of the northwest from the east and the consequent settlement of the country fuel was brought from the eastern mines with which the lines connected. It is only now that they have advanced so far westward that the opening of new and large coal mines has become a matter of necessity.

Although the available and convenient coal fields are not well known and developed, yet the large amount of preliminary exploitation already made has tended to show that coal fit for commercial use will have to be supplied by Wyoming.

Coal, in its broadest sense, is very wide-spread in its occurrence in Wyoming; it not only occurs in many separate fields, but these fields are usually of very great size. In the aggregate the surface actually underlain by coal-bearing strata can not fall short of 30,000 square miles. But some of this immense area lies so far beneath the surface that it is out of the reach of the miner, and of the remainder many thousand square miles are of little economic importance on account of the inferior quality of the coal, and the land is more valuable for agricultural (even as grazing purposes) than it will ever be as coal land. There remains, however, large areas of coal land capable of furnishing a practically inexhaustible quantity of excellent coal; and this not only includes the area controlled by the Union Pacific but other areas north of its line which can and will satisfy the demands of the northwest for a cheap fuel. The railroads will only be called upon to exercise ordinary intelligence in the selection of lands and to recognize the fact that they will have to go to good coal; it will not come to them.

There are several causes which render much of the western coal worthless. Among these are the presence of excessive amounts of water in the composition of the coal, of sulphur, and of ash. Water is objectionable because: (1) It causes the coal to slack and fall to pieces when it is subjected to the action of the atmosphere and the jar of transportation and handling. (2) It deducts from the amount of combustible matter in the coal. (3) It takes a portion of the heat of the coal to evaporate it. (4) It causes the coal to spark and fly to pieces when burnt. (5) It is generally associated with other deleterious constituents which deduct from the heat-giving power. Sulphur and ash are objectionable for obvious reasons.

Valuable empiric knowledge may be had by assaying coals by the method in common use and comparing the results obtained on samples whose practical value is known with those obtained on samples from new localities. Thus the less the invisible water the more the fixed carbon; the less the ash, the heavier the flame, the better the coal.

The following list of analyses will show what I mean :

No. of analysis.	Water.	Gas.	Fixed carbon.	Ash.	Flame.
1.....	5.75	42.13	44.34	7.78	Very heavy.
2.....	8.59	38.91	49.74	2.76	Heavy.
3.....	9.61	34.97	53.97	2.76	Do.
4.....	11.70	41.41	39.65	7.24	Light, sparky.
5.....	13.33	32.69	49.93	4.05	Do.
6.....	22.27	35.74	41.18	0.81	Very light and sparky.

No. 1 has the least moisture and will stand transportation better than any of the other coals. No. 2 has more fixed carbon and less ash but more water; it is an excellent proven fuel. No. 3 is equally as good as No. 2, but has never been shipped. No. 4 can be used as a locomotive fuel, but is less satisfactory than the preceding. No. 5 will burn readily when freshly mined. It slacks badly, will hardly stand transportation, and will not furnish much heat. No. 6 is a lignite, practically worthless for all purposes of trade.

As will be seen later, good coal, containing, let us say, less than 10 per cent. of moisture and possessing other desirable qualities, seems to be wanting in some fields, while in others both good and bad coal occur. I know of no field in Wyoming in which there is all good coal; no matter how good a large amount of the coal may be, every field has also its coal of inferior quality.

Besides quality there are other important conditions to be fulfilled before mines can be opened. Consequently the selection of lands suitable to mining purposes in all respects is no easy matter, and it requires skill and perseverance and time and money to do it. Systematic prospecting on the most economic plan is necessary.

It seems to the writer that the most reasonable method of prospecting embraces the following successive steps. These steps, which require a progressive expenditure of money, are as follows :

- (1) The discovery of coal-bearing strata.
- (2) The preliminary development of such lands to discover coal of good quality.
- (3) Continued development where good coal has been found to discover unbroken areas big enough to furnish a large amount of coal.
- (4) The purchase of such lands and the final development in opening up the mines and placing them in condition to produce and ship coal.

The first step is easily accomplished. The prospector has only to choose the coal fields most convenient to the market to be supplied, and to begin at once upon the second. The croppings, changed by surface action, indicate but little. The coal beneath the surface has to be reached. This may be done partially by examining the openings already made and by having new openings excavated as far beneath the surface as necessary. Usually the distance is not great, and the cost but a few hundred dollars. The third step is taken when good coal is found and not before. First, a careful study of the surface should be made. If this is satisfactory the land should be filed upon by a declaratory statement, which costs about 2 cents an acre and holds the right to it for one year. Then prospecting should be continued by openings along the coal croppings and diamond drill borings back from the crop.

The fourth step presupposes success in the previous three. The necessary quality and quantity is proven. Only now should the land be purchased, the mines opened by a system carefully planned to suit the ground, and connection made by rail between the mines and the market.

When the great outlay of capital necessary for coal mining is considered it may seem that such a simple and fundamental course as that here laid out would be well understood and that it was scarcely worth while to formulate it. But while such a course is adopted by some the writer could mention cases where large sums of money have been lost by ignoring it. Perhaps he could predict some failures for the future which will be due to the same cause.

With this, perhaps too long, introduction a brief description of various coal fields will be given. It is left to the discriminating power of the reader of the pages which follow to determine whether or not the assertions made and conclusions drawn have any justification in fact.

THE COAL LANDS WITHIN THE LIMITS OF THE UNION PACIFIC LAND GRANT.

Up to the present date but little coal has been mined and shipped from any places in Wyoming, except along the line of the Union Pacific Railway. No other road has built far enough into the Territory to reach the fields where good coal may be had.

The Almy mines.—Coal has been mined in the vicinity of Almy, in the southwest corner of Wyoming, for about twenty years. It occurs in very large seams, subdivided by bands of bone or slate, which are either left standing or separated from the coal after it is broken and left in the mine. The coal is used almost exclusively as a locomotive fuel; it does not answer well for domestic use. Most of it is consumed by the Central Pacific Railway, which, as well as the Union Pacific, controls mines in this locality. The Almy No. 4 mine, controlled by the latter company, has been abandoned during the past year, although only about one-fourth of the available coal was mined. A creep let air into a fire in the mine, and it could not be closed off effectively, and as the seam gives off fire damp it was considered unsafe to continue working it. The company is now opening a new mine, which, I understand, promises to be fully as good as No 4.

According to the report of Mr. Epperson, the inspector of mines, this district produced the following amount of coal during the year 1888:

	Short tons
Union Pacific mines.....	155,267
Central Pacific mines.....	206,613
Total.....	361,880

*The Rock Springs mines.**—The Rock Springs coal fields are extensive; the coal is of excellent quality. It may be cheaply mined, cheaply carried, and there is a market for it both east and west. Already it is sold on the Missouri River and Pacific coast, in Colorado and Montana, and as yet the mines are in their infancy. The coal department is largely increasing the capacity of its five mines and new companies, encouraged by the policy of the railroad, are opening up mines, and the output promises to be quadrupled in a few years.

The coal occurs in the gray or whitish, coarse, massive, usually soft sandstones of the Laramie group. The croppings may be traced and the veins identified for a distance of 7 miles. Beyond this limit they are found at intervals along an approximately east and west line, but these seams have not been oriented with reference to those on which the mines are located. Early in the seventies much work was done upon the coal near Black Buttes, a station about 40 miles east of Rock Springs, but the mines were abandoned, either because the quality of the coal was not satisfactory or for some unknown cause. To the southwest croppings are found near Green River, but the quality of the coal has never been proven.

The outcrops at the mines pass in a northeasterly and southwesterly direction through the town, or upon either side of it, and the beds dip from N. 50° to 70° W., at angles varying from 6° to 20° from the horizontal. Following the surface in the direction of the dip the coal measures disappear under Tertiary rocks, which rise in a long abrupt-faced table-land called White Mountain.

Six workable seams upon which mines have been opened are known. There are many other seams so thin as to be unworthy of consideration. Owing to the fact that the workable seams are numbered after the name of some mine situated upon them there is no numerical sequence corresponding to the order of their succession. Thus, according to the Rock Springs nomenclature, No. 1 seam (on which No. 1 mine is located) is the fourth, No. 5 the third, No. 7 the fifth in order from the top. Consequently it is better for the purposes of this paper to name the beds alphabetically, beginning at the topmost vein with the letter A. The following table will show the thickness of the seams and the mines located upon them. The mines of the coal department of the Union Pacific are named by number:

Seam.	Thick- ness.	Mines.
	<i>Feet.</i>	
A.....	7½	Old No. 6.
B.....	7	Old No. 5.
C.....	4½-7	No. 3, new No. 5.
D.....	9-11	No. 1, No. 4, Rock Springs Mining Company No. 1.
E.....	4½-7½	No. 7, No. 8 shaft, Hopkins, Rock Springs Mining Company No. 2.
F.....	4	Van Dyke.

Seams A and B are no longer worked. The quality of coal was not satisfactory in old No. 6. In old No. 5 there was too much slate. This does not preclude the latter

* The writer is indebted to Mr. G. L. Black for many facts and figures concerning the Rock Springs mines.

seam from affording valuable mines at other points. Excluding A the total thickness of the coal of the remaining five seams average about 33½ feet. That is they are capable of producing about 40,000 tons of lump coal to the acre, or 25,000,000 to the square mile.

Distances between the seams.

	Feet.
A and B.....	400-500
B and C.....	220
C and D.....	225
D and E.....	300
E and F.....	200

This leaves a distance of about 1,450 feet vertically between A and F.

The dip of the formation varies between 6° and 20°, but the changes are gradual, and a uniform pitch is usually maintained for long distances. Small faults from 2 to 20 feet are not uncommon. The fault with the greatest displacement (65 feet) passes in a northerly direction between No. 1 and No. 4 mines. The walls are well adapted to mining. The roof seldom shows more than 1 foot of shale before the massive sandstone is reached, and the old soil of the floor is firm and not deep. Consequently the exploitation of the mines is simple, and may be, and is, accomplished cheaply.

Rock Springs coal is celebrated as a fuel for domestic, steam-making, and furnace uses. When intensely heated in a closed vessel it will cake, but it does not make a marketable coke. It contains more fixed carbon and less ash than any other Wyoming coal at present mined. It contains usually but little slate, and that may be easily separated in mining. The quality of the coal extracted from the various mines is about the same, and none can claim any striking superiority. The average specific gravity of the coal, as given in the table below, is 1.301. This table will show the quality of the Rock Springs coal. The samples were taken by carefully sampling the coal obtained by picking a groove from the roof to the foot of the various breasts. The coal was analyzed two weeks after the samples were taken, and consequently the water contents are a little high.

No.	Water.	Volatile matter.	Fixed carbon.	Ash.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
1.....	9.05	40.00	48.87	2.08
2.....	9.22	38.78	49.51	2.49
3.....	8.58	37.82	49.73	3.87
4.....	7.51	39.96	50.84	2.59
5.....	5.65	39.86	50.28	4.21

1.—Rock Springs Coal Department, No. 4 mine. 2.—Rock Springs Coal Department, No. 7 mine.
3.—Rock Springs Coal Department, No. 5 mine. 4.—Rock Springs Mining Company, No. 1 mine.
5.—Rock Springs Mining Company, No. 5 mine.

It is a matter of regret that no samples were taken from the Hopkins and Van Dyke mines. I understand that both mines are producing an excellent quality of coal.

The following table, compiled from various sources, shows the total production of the Rock Springs mines to 1888, inclusive:

	Long tons.
1868 to 1885, inclusive.....	2,703,994
1886.....	359,338
1887.....	465,444
1888.....	766,197
Total.....	4,294,973

During the past calendar year the capacity of the mines has been largely increased, and it is intended to at least double the capacity during the next twelve months. The present output of the mines per day of ten hours is said to be as follows:

Name of mine.	Capacity.	Name of mine.	Capacity.
	<i>Long tons.</i>		<i>Long tons.</i>
Coal Department:			
No. 1.....	800	Rock Springs Mining Company, No. 1.	300
No. 2.....	800	Hopkins.....	200
No. 3.....	800	Van Dyke.....	125
No. 4.....	400		
No. 5.....	500	Total.....	3,925

In other words, the Rock Springs mines are now in a condition to produce coal at the rate of 1,200,000 tons per year without drawing upon their reserve too rapidly.

The Carbon mines.—The Carbon mines, like those of Rock Springs, are directly upon the line of the Union Pacific Railway. The coal land is broken by a series of faults into a number of separate areas. Each of these areas that is conveniently situated has a mine, producing or worked out, upon it. The Carbon coal was celebrated as a locomotive fuel, capable of making an intense and large amount of heat, and for such use was the best in Wyoming. Now, however, the old mines are practically worked out, and unless new ground is opened up, the town will be abandoned in a few years at most. The owners have foreseen the exhaustion of these mines, and prepared for it by opening new ones.

The Dana mine.—One of these new mines is at Dana, 20 miles west of Carbon. The entrance to the main slope is within a few hundred feet of the railroad. The crop-pings of the seam have been traced for several miles. At the opening the dip is about 35° to the northeast. The slope and air course are each down about 700 feet from the surface, and entries are being driven. The capacity of the mine will be fully 1,000 tons of coal per ten hours.

Two analyses of this coal, taken from a little over 100 feet down the slope, gave these results:

	1.	2.
Water	11.70	11.30
Gas	41.41	42.01
Fixed carbon	39.65	39.69
Ash	7.24	7.00

This coal is not as good as the old carbon coal. It slacks more and makes more sparks when burnt. The ash also is high. The active work upon the mine was begun when it was thought that the policy of the railroad would be against building to the better coal lying 6 miles to the north.

The Hanna Mines.—Chimney Springs are said to be so called on account of the smoke from a burning coal bank that escaped from a small hill above them when they were first discovered. It has long been known that there was coal in this region. Over a year ago the owners of the carbon mines began to prospect the croppings, and found that while some of the coal was of rather poor quality there was also a number of veins that furnished excellent coal.

Intelligent prospecting developed the fact that good coal was there in abundance, and a new series of mines are being opened and a branch track over 20 miles in length being built from the main line at Medicine Bow. The town at these mines will be called Hanna.

Three veins of coal, each over 15 feet thick, and a number of others large enough to work, have been discovered. The best among these are being developed. The work already done is not sufficient to allow any estimate of the amount of coal this district is capable of furnishing. It is sufficient to say that it would certainly take years to exhaust it should all the coal used in America be taken from it. The coal is clean, and contains a low percentage of moisture. It does not slack, and promises to make not only an excellent locomotive fuel, but to prove superior as a steam-maker generally and for domestic use. It will be seen that the fixed carbon is low.

	1.	2.
Water	7.64	8.43
Gas	45.89	45.88
Fixed carbon	45.11	41.46
Ash	1.36	4.23

These two samples come from No. 1 mine, and represent two different looking kinds of coal from the lower 8 feet of a vein 17 feet thick. It is this part of the vein that will be mined.

The value of the unprospected area within the Union Pacific land grant is unquestionably very great. The coal-bearing rocks extend both north and south of Rock Springs, and occupy a large area of that region, while in Carbon County it is no exaggeration to say that nearly half the land is underlaid by coal. North of Fort Steel, on both sides of the Platte River, there are large areas that I judge to be unbroken which would probably yield excellent coal and immense quantities of it.

South of the railroad there are also important though smaller undeveloped areas. Some of this land is now being carefully prospected by the most competent people, and in case the search is successful there will probably be another railroad built to it.

COAL LANDS WITHOUT THE RAILROAD LIMITS IN CARBON AND FREMONT COUNTIES.

But north of the Union Pacific Railroad limits in Carbon County there are important coal areas, which in my opinion are capable of supplying good coal in large quantities.

Rawlins Mountain is the crest of an uplift which has thrown strata far older than the western coal measures above the level of the surrounding country. The strata dip radially away from the center of this uplift, and at the base of the mountain the older rocks pass beneath the surface and make room for the younger, until finally the coal-bearing strata appear at distances inversely proportionate to the angle of dip. To the south of the dip is steep, and coal seams are found a few miles from Rawlins. To the east and west they only appear 12 or 15 miles from the town, while to the north, toward Whisky Gap, they do not appear for 30 miles; in other words, the Rawlins Mountain uplift forms, so to speak, a great elliptical island of older rocks, about which the coal measures outcrop.

This leaves a rudely semicircular line of outcrops of coal veins north of the railroad limits. Passing from the limits in township 24, range 90, the croppings extend north through township 25, range 89, north and east through township 26, range 88, and thence in a rudely southeasterly direction to township 25, range 85, and beyond into the Coal Creek basin, again within the railroad limits.

In townships 25 and 26, ranges 89 and 90, the coal-bearing rocks dip to the west and northwest until they disappear beneath the younger rock, and even to Muddy Gap they unquestionably underlie a large area. From the latter point southeast the width of the belt is limited by the Ferris and Seminoe Mountains, which are made up of rocks older than those which carry the coal.

A little work has been done along the line of croppings described and has developed the fact that there is good coal in this district as well as some that is not good. Some of these will be mentioned.

Near Bull Springs there is an opening 30 feet in length upon one of several seams of coal. The seam is between 6 and 7 feet in thickness. I have not yet made analyses of the samples taken by myself. A sample given me gave the following results:

Water	9.31
Gas	34.97
Fixed carbon	53.97
Ash	1.75

In looking at the opening afterwards I could not but think that the ash would be somewhat higher if a careful average sample were taken. Still I consider the prospects for quality at this locality excellent. The analysis shows the coal to be fully as good as that of Rock Springs.

From this point the croppings of large undeveloped seams may be followed for over 15 miles, where there is another opening that was not far enough in to show more than promising prospects for good coal.

Continuing westward along the croppings we reach the Muddy, a sluggish stream which flows into the Sweetwater River. Considerable development has been done upon several of the coal veins which outcrop on certain branches of this stream and at points which are all less than 15 miles from the Sweetwater. The analyses of samples of this coal show that it is not fit to supply the northwest trade, and that the land will be of little value as coal land unless other and better seams are discovered. They are:

	1.	2.	3.
Water	13.13	13.61	14.30
Gas	35.57	36.00	34.42
Fixed carbon	45.40	46.24	40.03
Ash	5.90	4.15	11.25
	100.00	100.00	100.00
Flame	Light, sparky.	Light, sparky.	Light, sparky.

Passing southeast from the last locality along the base of the Ferris Mountains the surface is largely covered with sand hills, and is wholly unprospected. It is only

after the divide between Sand Creek and a tributary of Hurt Creek is passed that coal croppings with some development upon them are to be found. These coal lands extend from the base of Bradley's Peak southeast along the base of the Seminoe Mountains to and across the Platte River. From the river westward the coal lies in a synclinal basin, and outcrops in two parallel lines. Towards Bradley's Peak this simple structure is complicated by a system of faults which are imperfectly understood.

The coal seams of this region have been opened at a number of points, all north of the railroad limits. Only a few of them will be mentioned.

The westernmost opening is above the Fieldhouse ranch, where a tunnel has been run in by ranchmen upon a 7-foot vein. A thin layer of clay (from 1 to 6 inches) shows in places about 2 feet from the roof of the vein; otherwise the coal is perfectly clean.

The Penn Mining Company own some land 2 or 3 miles below the Fieldhouse bank. They have opened the vein through a slope. The coal is about 5 feet thick, and uniform in character. It does not slack, as evidenced by a pile at Seminoe which has lain in a shaft-house over a year.

The third opening is at a point about 2 miles above Miller's ranch. There are here two veins about 50 feet apart, each 12 feet thick. Gopher holes indicate the presence of other veins in the same group; but these have not been opened up. The first work done here was upon the upper of the two veins. A slope was run for 100 feet or more nearly upon the strike of the coal and a shaft was sunk for ventilation. The roof of the slope caved about eight years ago, and no work has been done upon the vein since. The coal was examined through the shaft. Although untouched for eight years and with each winter's snow filling the shaft and melting, the walls still stand firm and unslacked, although much altered by contact with air and water. No analysis of the coal was made because of this change; but from its appearance it is believed to be of excellent quality. When the first slope caved the lower vein was opened in a similar manner. The coal is reported to be inferior to the upper vein in quality. Notwithstanding, it is certainly the best coal now mined in Carbon County. With the exception of a thin streak of bony coal (2 to 4 inches) near the foot of the vein, the coal is perfectly clean. It shows no iron pyrites, is bright, close grained, and breaks into cubical blocks when struck with a hammer. The dip at the Miller bank is between 50° and 60° . At the two localities described immediately preceding the dip is not over 10° .

The three following analyses will show the composition of these coals:

	1.	2.	3.
Water	9.62	9.40	11.42
Gas	36.93	36.90	37.87
Fixed carbon	51.12	47.30	48.54
Ash.....	2.33	6.40	2.17
	100.00	100.00	100.00

No. 1.—Miller opening, 12-foot vein. No. 2.—Pen Mining Company opening. No. 3.—Fieldhouse opening.

It is a matter of regret that time and space will not permit a fuller description of this very important field north of the railroad limits. That good coal occurs here is proven; that it occurs in quantity on the west and north sides seems almost certain. In the Hurt Creek basin the size of the deposits will have to be determined with great care. The entire area is accessible by easy grades from the Sweetwater River. It will be seen also that this is probably the only field east of the continental divide where a railroad up the Sweetwater can get a coal well fitted to the demands of commerce.

THE COAL-FIELDS OF NORTHEASTERN AND CENTRAL WYOMING.

The Powder River coal area.—The coal area of this region is immense. One great field occupies the basin between the Black Hills and the Big Horn Mountains, and extends from far within the confines of Montana to and across the North Platte River. This field, called for convenience the Powder River coal-field, occupies about 15,000 square miles of the surface of Wyoming, and is capable of producing many thousand million tons of coal. The same or different seams may be seen outcropping every few miles, so that it is very easy to get to the coal, and the numerous settlers have almost always a cheap and convenient fuel near at hand—a very important circumstance when it is remembered that wood of any kind is often scarce. But even where

wood is abundant coal is usually preferred. In Johnson County, near Buffalo, there are two small mines that supply the town and military post. Similar mines are opened near Sheridan. Many other openings of small extent supply individual settlers who do not farm upon the land because coal is so abundant. But, as far as known, the coal of this district has little other use than that of supplying a local market.

The present discoveries do not warrant a belief that it will supply a fuel that will stand transportation and do the work that commerce demands. As long as the transportation amounts to but little, and it does not make a great deal of difference whether it takes 6 tons or 10 to last a family through the winter, this coal will answer, but when the value is enhanced by the cost of transportation better coal is required. For this reason, except for local consumption, coal mining in the Powder River coal-field, along the line of the Elkhorn and Missouri Valley Railroad, has not proved successful. Certain people took up and bought about 3,400 acres of land on Shawnee Creek near this line, and made expensive developments, only to find out that their coal would not answer the purpose of trade and that the money they had invested was a dead loss. Two other mines have been opened up further west immediately on the line of the railway. With the advantage of very low rate they are able to sell a few thousand tons yearly in the northwest, but they can not sell enough to warrant the belief that they will make large mines. This prediction does not seem unwarranted when we consider the fact that the railroad company hauls Iowa coal to the Glen Rock and Deer Creek mines to draw back those fuels to the eastern markets.

The Rattlesnake coal-fields.—This area lies north of the Rattlesnake Mountains, and extends from the North Platte River, below the mouth of the Sweetwater, northwest, nearly to Lander. A large portion of this field is covered with younger rocks, which cover up the coal croppings. The coal, like that of the Powder River field, is a lignite, which is serviceable to the ranchers as a convenient fuel, but which, as far as known, does not produce coal suited to the purpose of trade. The western portion of this field, which includes the coal-seams near Lander, is excepted from this statement. I am not yet prepared to speak of it.

THE COAL-FIELDS OF NORTHEASTERN CROOK COUNTY.

The great foot-hill table-land or mesa of the Black Hills in Wyoming, cut by deep, more or less precipitous cañons, but otherwise standing up above the surrounding country, consisting essentially of hard, coarse-grained sandstones and fine conglomerates of white and yellowish colors, overlaid at the base by dark-colored shales, underlaid by light-colored clays and other variegated strata, can not escape the notice of the most careless observer.

Owing to the difference in hardness from the rocks below it, the mesa has a tendency to present a bold escarpment towards the center of the hills. Owing to the at first nearly horizontal position of its strata, it slopes but gently outward until the final steeper inclination of the strata causes it to pass down to the level of the plains at a slope entirely dependent upon the angle of dip.

This prominent mesa is composed of what is known as the Dakota group of rocks. Recently new discoveries of coal have been made in it, and for this reason it is now of special importance.

Area.—It is here sufficient to say that the Dakota groups of rocks in Crook County extend from a point on the South Dakota line southeast of Jenney's Stockade in a direction west of north through townships 45 and 46, range 61; townships 47 and 48, range 63, and township 51, range 66. From thence onward it passes northward around the west side of Missouri Buttes. The belt thus described varies considerably in width but will average fully 6 miles. Besides this the Dakota forms the surface rock over a large portion of the territory lying between the north side of the Bear Lodge Mountains and the Belle Fourche River.

Allusion has already been made to the cañons which cut deep into the mesa. This applies not only to those of the large streams, but to innumerable branches which come in from all directions. These cañons are so deep that they all cut down through the coal veins and expose them outcropping on either side, and in the majority of cases they even cut entirely through the Dakota rocks and into the Jurassic clays. So frequent and near together are they in places that they do not leave areas of unbroken ground sufficiently large for mining purposes. It is only in those places where there are few cañons that large pieces of ground are left with uninterrupted coal-veins beneath them.

Further, although there are few places where the Dakota does not show some indications of coal, there are many where the veins are too thin or impure to work. As a consequence there is a very large portion of the area in question that will prove unproductive, and it is only where good coal is found underlying large areas and in veins sufficiently thick that mines will be eventually opened.

In spite of these very considerable limitations there are large, unbroken tracts of land, as yet unprospected, that may or may not afford mines. The few openings now

to be mentioned only mark a beginning of the search for good coal in the Dakota rocks of Crook County.

The qualities which render this coal desirable are: (1) They contain less moisture than any other coals yet discovered. (2) They do not slack. (3) Some of them coke. The difficulty will be to find the coal possessing these qualities and also having a low percentage of ash. The ash and in some places the sulphur are the chief drawbacks.

Important development work has been made on Hay Creek, north of the Bear Lodge Mountains, in township 54, range 61; at the Brier Hill Bank, on Skull Creek, in townships 47 and 48, range 63, and at the Mount Zion mines, in township 46, range 61.

The Hay Creek mines.—As a result of the necessity for good fuel at the Black Hills mining towns, a search for coal was instituted long ago, and the Hay Creek veins were discovered over ten years since. To-day several slopes have been run in on the coal. Some of these have caved in on account of insecure timbering and the unsatisfactory character of roof and floor. The Barrett and Fox mine is now cleaned out. These workings expose two veins of coal lying about 20 feet apart, and separated by fire-clay and sandstone. The bottom bed lies about 30 or 40 feet above what I consider the top of the Jurassic formation. Each of the veins appears to be about 4 feet thick. At a point about three-fourths of a mile west of the Barrett main opening the lower vein is said to be 7 feet thick. * * *

The following analyses were furnished me by Mr. Barrett, the first two being made by the chemist for the Chicago and Northwestern Railway, the last by Mariner & Hoskins, of Chicago:

Constituents.	1.	2.	3.
Water.....	8.18	8.74	9.02
Gas	41.95	41.20	39.90
Fixed carbon	40.12	39.91	39.74
Ash	9.75	10.15	11.34
Total.....	100.00	100.00	100.00

In the latter part of July some other men were prospecting in the Jurassic clays south of the openings already described. They found a streak of carbonaceous matter along the bed of the creek, which they followed in some distance, and at that time they were sinking a shaft below it through fire-clay, containing pieces of wood that had been partly changed to coal and the remainder petrified. There is a rumor that they finally struck a vein of coal in their shaft.

The Brier Hill Coal.—Two tunnels, each 60 feet in length, have been run in upon the coal vein underlying this property. The discovery tunnel shows the vein to be 8 feet 4 inches thick, of which the upper 6½ feet is chiefly of dull, lusterless color, and has a brown streak. The bottom 2 feet is bright, fine-looking coal.

The other tunnel, situated a few hundred yards distant, shows the vein to be here only 6½ feet thick, of which the upper 18 inches is of dull color, then 3 feet 4 inches of bright coal, and the bottom streak of duller color.

Analyses of this bright-looking coal show it to contain a very large amount of gas, a low percentage of fixed carbon, and a low percentage of moisture.

Water	5.25	5.75
Gas	41.70	42.13
Fixed carbon.....	44.98	44.34
Ash	8.07	7.78

These samples are from selected pieces which were sent me from Crook County about two years ago. My own samples give the following results:

Constituents.	1.	2.
Water	6.81	8.11
Gas.....	35.66	30.31
Fixed carbon	40.81	42.28
Ash	16.62	19.30

It will be seen that the general average of the vein in the two tunnels (Nos. 1 and 2) is unsatisfactory in that the percentage of ash is very high. No. 3 is the best. It represents an average of the 3-foot 8-inch streak in the center of the 6-foot 4-inch breast. A streak of this thickness would pay to mine if it were uniform. I fear from the nature of things that this streak will be irregular.

The Mount Zion mines.—This locality was visited in July last. The writer was treated with every courtesy by those in charge, and wishes to here express his appreciation of the kindness shown him.

<i>Sandstone.</i>
<i>Shale.</i>
<i>a 0.85</i>
<i>b 0.25</i>
<i>c 0.6</i>
<i>d 0.7</i>
<i>e 4.3</i>
<i>f 0.3</i>
<i>g 0.7</i>
<i>Fire Clay.</i>
<i>Sandstone.</i>
<i>Jumbo Seam.</i>

These mines are situated in township 46, range 61. The Jumbo Claim is in the center of section 29, the Antelope is contiguous upon the west. The other coal claims adjoin. The owners have and are investing large sums of money. Besides the developments actually made upon the coal seam they have purchased about 6,000 acres of coal land, freighted in and set up a large saw-mill, graded many miles of wagon road, built many houses, located a town site, made hundreds of thousands of bricks, and brought in and set in place an expensive mining plant of the most improved type. In addition to this the Burlington system is extending its Broken Bow branch about 200 miles in order to connect with the mines by the time they are ready for

production. When the mines are opened and ready to ship coal and the railroad connection completed the total outlay of money can not fall far short of \$2,500,000. Consequently, the success of these mines is a matter of great importance to those who have invested this money.

Prospecting in the vicinity of the Mount Zion mines was commenced nearly two years ago. At first the results were so unsatisfactory that the search was nearly abandoned. The coal seams found were thin and impure—nothing more nor less than slate. About section 29 the outcropping coal had been mostly burnt. But one point was found that the old fire had spared, and the discovery was made here which has led to the investments described. A point was selected to the west of this discovery, where a gulch several hundred feet deep, running east of south, cuts down through the coal and leaves the seam outcropping on either side about 55 feet above the water channel. Two mines are being opened here, the one on the east called the Jumbo, the one on the west called the Antelope. They will each have a capacity of 100 tons per hour. The coal was found to be burnt back of the crop for a distance of 200 feet. When the fire had worked back this far the whole mass of the overhang hill caved in and smothered it out. The following were the developments that I saw at the mines: (1) The Jumbo discovery tunnel which starts at the croppings and follows the vein in 78 feet along the floor, 69 feet along the roof of the seam. (2) The Antelope air-way, which strikes unburnt coal 200 feet in and passes 12 feet into it. (3) Two small prospect tunnels run, one for each mine to determine the level at which the output tunnel should be started. These pass through the burnt zone but do not enter into the coal far enough to show its quality. (4) A similar tunnel about 300 yards up the gulch from the Antelope main entry. (5) The Antelope output tunnel and the Jumbo air-way and output tunnel, none of which had reached the solid coal in July. (6) Certain short tunnels on the crop of the vein in various gulches, none of which showed solid coal. Of these workings, aggregating not more than 1,200 linear feet of tunnels, only two showed the solid vein. These together were in solid coal for a distance of less than 75 feet.

Before describing them it may be well to mention how the samples for analysis were taken. A suitable point was selected as near the face as practicable and a tape hung from the roof to the floor. Then the various bands in the vein showing any visible difference in appearance were measured and marked off by small pieces of white clay stuck to the face. Each band and its thickness were entered in a note-book and lettered. Then samples were taken as judgment directed. In taking a sample a cloth was spread on the floor and a groove of uniform width and depth was made vertically across the bands to be assayed. These pickings were crushed and carefully quartered to a convenient bulk.

The Jumbo discovery tunnel is 69 feet under cover. The vein is 7.7 feet thick. Over the coal there is little more than 1 foot of compact slate with sandstone above it. Below the coal there is found 2 to 6 inches of fire-clay and then white sandstone.

The cut represents a diagram from my note-book. The letters represent the various bands distinguished, the figures their thickness in feet and decimals of feet.

Streaks A, C, E, and G are bright-looking coals, of usually uniform texture and luster; B and F are shales of grayish color; D is streaked in appearance, having irregular bands of coal alternately bright and dark. I was informed that it was the intention to mine the coal by machinery and to cut in on streak G and shoot down from streak A, and in breaking up the coal to throw B and F aside. From analyses of coal similar to streak D from the Antelope, I think that this will not yield good results. And in my opinion only streaks E, F, and G will be mined, of which F will be thrown out. I took two samples of this streak, one from a point 33 feet under cover and one from a point 5 feet from the face. The analyses gave:

	1.	2.
Water	5.17	8.10
Gas.....	41.40	42.57
Fixed carbon	39.98	37.51
Ash.....	13.45	11.82

No. 2 was kept in an air-tight bottle for a certain purpose. It will be seen that the moisture is higher than in No. 1, which represents the coal as it would arrive upon the market. I have not yet made other analyses taken from this opening.

The next cut is a similar representation of the vein as exposed in the Antelope air-way. Streaks A, C, E, and G represent the cleaner coal. Streaks B, F, and H the shale, and streak D a band of so-called bony coal. It will be seen that the two sections closely agree with each other, only the bottom streak is thicker and a new streak of bone (F) has appeared in the Antelope tunnel.

The following are analyses of samples taken from the Antelope:

	1	2.	3.	4.
Water	5.86	6.44	6.56	3.32
Gas	42.17	39.75	37.96	38.94
Fixed carbon	42.22	41.34	40.09	31.73
Ash.....	9.75	12.47	15.39	26.01

These analyses represent samples of the following streaks:

- No. 1.—Streaks E to I, inclusive, except F and H.
 No. 2.—Streaks A to I, inclusive, except B, F, and H.
 No. 3.—Streaks E to I, inclusive.
 No. 4.—Streak D.

<i>Sandstone.</i>
<i>Shale.</i>
<i>a 0.6</i>
<i>b 0.4</i>
<i>c 0.6</i>
<i>d 0.8</i>
<i>e 1.1</i>
<i>f 0.1</i>
<i>g 1.5</i>
<i>h.0.35</i>
<i>i 2.45</i>
<i>Fire Clay.</i>
<i>Sandstone.</i>
<i>Antelope Seam.</i>

There can be no doubt but that specimen samples showing far less ash, and equally as good in all other respects, could be taken. In fact, I have made analyses in which the ash was not over 7 per cent., but the analyses given above represent averages. In my opinion it will be necessary, unless the quality of the seam greatly improves, to abandon all streaks above E and throw aside F and H. Otherwise the percentage of ash will be great. While the ash in these coals is high the moisture is low, and if we add the percentage of gas and fixed carbon together it will be seen that the total combustible matter does not compare unfavorably with the Union Pacific coals. Further, this coal will probably yield more heat to the per cent. of combustible matter than the others.

If the most conservative view of the portion of the vein to be worked is taken, each opening shows about 5 feet of clean coal and from 4 to 5 inches of slate, and if we infer that a large area contains upon an average a like thickness and grade of coal, the vein will yield over 3,500,000 tons to the square mile. This question of continuity in thickness and quality is an exceedingly important one. * * *

With the latter field the writer has mentioned all the coal areas in Wyoming which he has personally inspected. He has not yet examined the unquestionably large areas of southern Albany and Carbon Counties, which he understands are of great promise, nor the coal fields of Uinta County and the Big Horn Basin. Although he has heard reports and rumors of excellent coals in all of these large fields, he is as yet unable to report upon them, for the want of personal knowledge. Consequently, unless it is remembered that this paper upon Wyoming coal fields is incomplete and that it leaves out large and promising areas completely, injustice will be done the subject.

The development of Wyoming coal fields is in its infancy. No one knows their merits, no one knows their capabilities to produce good coal. It is only known by the little that has been done that careful and intelligent search will render the selection of good lands easy and inexpensive. That the careless and hasty selection of such lands by persons ignorant of the occurrence of western coals will usually result in failure and the loss of large sums of money to the investors, and in injury to the good name of Wyoming.

PETROLEUM FIELDS.

This subject was treated quite fully in the report of the geologist made to the tenth legislative assembly and published in the spring of 1888. This article is a very brief summary of chapter there given, with fuller description of a new district.

The first discovery of natural oil springs in Wyoming dates back at least 25 years. In 1863 oil was collected from a spring near Poison Spider Creek, and sold along the Mormon trail, for axle grease, and a few years later it was collected from springs near Hilliard, in southern Uinta County and sold as a lubricant to the newly opened Wyoming coal mines.

But it has only been during the past decade that the oil fields have attracted any considerable attention; during the past five years that any borings have been made for oil. It is only now that they are deservedly exciting the interest of Eastern capital and that wells are being drilled in various places. Petroleum is found in numerous escapes in Uinta County, near Hilliard and Fossil; in Fremont County, near Lander, in Dutton Basin and on the Stinking Water River; in Carbon County, along the base of the Rattlesnake Mountains, on Salt Creek and the South Powder; in Johnson County, on the South Powder and the No Wood Rivers; in Crook County, at various points bordering the foot-hills of the Black Hills Range and Bear Lodge Mountains.

In all but one of the localities mentioned no intelligent prospecting has been carried on, and it has not been proven whether the oil exists in large quantities or not. A number of wells have been drilled and much money expended, but, with the important exceptions to be mentioned below, the prospecting companies have been too ambitious or too careless, or both, and, instead of sinking shallow wells at first and venturing deeper as the findings would warrant, they have selected points where the "oil sands" are so far beneath the surface that they have been unable to reach them.

The most important oil field, and the only one at all developed, lies near Lander, in Fremont County.

The three wells sunk on the Popoagie all struck oil. At this place there is a small oval valley surrounded by abrupt, often precipitous hills, over which at various points he found both oil and gas escaping. A good flow of live oil was encountered in each. These wells, which varied in depths from 350 to nearly 800 feet, were cased and supplied with valves to prevent the oil from escaping, but owing to the great gas pressure a large leakage can not be prevented—a pressure so great that upon suddenly opening the valves the oil spurts up like some black-watered geyser for 75 feet into the air. After the pipe thus clears itself the steady flow of oil is resumed, which, it is variously estimated, will aggregate from 600 to 1,000 barrels per twenty-four hours.

As these wells are about 100 miles from the nearest railroad, no oil has been shipped

on account of the expense of transportation, and that oil which escapes in spite of the valves is wasted and drains into several large ponds, where there are always thousands of barrels of oil collected. Its presence is indicated long before the ponds are reached by the strong but not disagreeable smell of escaping gas.

In color this oil is black. When fresh it contains a very large amount of absorbed gas. It will yield both illuminating and lubricating oil of excellent quality when distilled, and a residue which will be used as fuel for steam-making just as the residuum from the Colorado refineries is used under the boilers at the Leadville shafts.

The Shoshone wells yield oil from the top of the Carboniferous formation. The rocks dip steeply into the ground both towards and away from the mountains respectively on either side of the river, but lie flat along a narrow belt, parallel to the range, and situated where the dips change. This belt passes from Beaver Creek to the Big Wind River, a distance of about 60 miles, of which over 40 miles lie within the Shoshone Indian Reservation. The oil horizon lies at various distances beneath the surface along this strip. It is never less than 500 feet beneath the ground, and never exceeds 2,000. Oil springs are found on it in a number of places.

In purchasing or locating lands, care should be taken to keep on this belt, which might be called a zone of minimum depth. On either side of the red sandstone belt, and at short distance from it, the oil-bearing rocks are so far below the surface that it is scarcely practicable to try to reach them with a drill. There are claims located, and several times sold, on which it would be necessary to sink a well much more than a mile in depth in order to penetrate the known oil horizon.

Two new wells are being bored in the Rattlesnake district. One of these will have to be sunk to a depth of over 2,000 feet before the Dakota rocks are reached. The other, which is wisely located for a prospect well, has penetrated the upper Dakota sandstones. This rock was saturated with oil, but no appreciable yield was obtained from it. They are now sinking to prospect the lower sandstones.

Unfortunately for the district, the prospectors, with one exception mentioned, have tried to sink deep wells, which they have been unable to complete. Had they begun with shallow wells they would long ago have determined whether or not there were any merits in the district beyond surface indications, and either abandoned the search or ventured deeper with accurate knowledge of the way to drill in this different ground, and some tangible assurance of success.

I understand that promising results have been obtained from borings near Fossil, in Uinta County. But the driller is here presented with peculiar difficulties which he has as yet been unable to overcome.

The district in the vicinity of township 49, range 91, on the Norwood River, has not been visited since the boring of wells was commenced. The oil fields of Crook County were hurriedly inspected last August. As they have not been previously reported upon, a fuller description of them will be given.

The petroleum is found at many points as a stain in certain sandstones and even saturating such strata to such an extent that the oil seeps forth in springs. All of the oil yet found is heavy, green in color, and makes an excellent lubricator. The amount of illuminating oil it would yield is insignificant. The largest spring is in the SW. $\frac{1}{4}$ of the NE. $\frac{1}{4}$ of sec. 25, tp. 45, R. 62. The oil drains out of a porous sandstone of the Colorado group of rocks. There is a pit dug in the croppings of this stratum into which the water and oil collects. It will yield several gallons of oil daily. This oil is olive green in color by reflected light, brown by transmitted light. It has a density of $22\frac{1}{2}^{\circ}$ Baumé. It is a superior lubricator. At the spring the strata dip from 15° to 20° SW., but further out the dip rapidly increases to over 45° .

North of the Belle Fourche River, in the SE. $\frac{1}{4}$ sec. 27, tp. 52, R. 67, the same stratum of sandstone, here much thinner than at the point just described, yields seepages of oil. The pit upon this quarter-section, when newly cleaned out, is said to yield about 90 gallons of oil per month. The oil rock dips about 12° west. Further out the dip appears to grow less.

A number of wells have been sunk in this vicinity. The Standard well, which, through chance or intention, is excellently located for a prospect well, was sunk about half a mile west of the line of outcrop of the oil sandstone. It struck this stratum at a depth of 296 feet, and pierced it 306 feet. It yielded to the pump about 20 gallons of oil in twenty-four hours. Several very shallow wells sunk along the line of outcrop got very small amounts of oil.

The Great Northwestern well was started at a point about 5 miles south of the Standard, on the south bank of the Belle Fourche. It never pierced the main oil stratum because this rock outcrops to the south of it. At 155 feet a very small amount of oil was obtained from a stratum in the Dakota sandstones. From thence down to a depth of 930 feet it passed through the Dakota, Jurassic, and Upper Triassic sandstones. The money spent upon this well was little better than thrown away.

Two miles to the south of the Great Northwestern well the Rapid City well is now in the process of sinking. At a depth of 750 feet it had not yet struck the oil sand.

It is my belief that this field may develop into a small oil district. The oil is a

superior lubricator and will be valuable if obtained in quantities. The Standard well was sunk in the proper place, and the other work should be confined for the present, at least, to the same neighborhood, only the wells should be started further out from the cropping of the oil-bearing stratum. The indications are that this rock could be reached for a distance of several miles from the line of outcrop.

SOLUBLE SALT DEPOSITS.*

Soluble salts of two of the metals, sodium and magnesium, occur in extensive deposits in Wyoming. They are found in basins of small area which have no outlet for their drainage. They are called "lakes," because they naturally form in the lowest parts of the basins. In reality they are, with one exception, solid during all seasons of the year, and are only covered with shallow waters during the spring and early summer months.

There can be no question but that these deposits all arise through the evaporation of the waters of mineral springs which feed into the lakes and have no way of escaping.

The various deposits may be classified as follows:

	Name of deposit.	Locality.	Estimated area.
	<i>I.—Sulphate of sodium (Glauber's salt).</i>		<i>Acres.</i>
A	Union Pacific lakes	Albany County	60
B	Downey lakes	do	100
C	Bothwell lakes	Carbon County	100
D	Gill lakes	do	80
	<i>II.—Sulphate and carbonate of sodium.</i>		
A	Morgan lake	Carbon County	160
B	New York and Philadelphia lakes	do	150
C	Omaha lake	do	8
D	Wilmington lake	do	160
E	Wilkes Barre lake	do	50
	<i>III.—Pure magnesium sulphate (Epsom salt) and mixture of sodium and magnesium sulphates.</i>		
A	Brooklyn lake	Carbon County	100
B	Philadelphia lake	do	40
C	Chicago lake	do	20

The estimated areas apply to the actual deposits and not to the claims. The latter are rectangular in shape and necessarily include much land not underlaid by the salts. The thickness of the deposits is variable. Along the edge it is of course very thin. Towards the center the thickness is generally unknown, but by borings or pits it is shown to be over 8, 10, even 20 feet, without the bottom being reached. Consequently no legitimate estimate can be made of the amount these deposits are capable of producing. The total area of the first two classes, excluding the Wilmington, which has no solid deposit, is 708 acres. This would yield over 30,000,000 cubic feet of sodium sulphate for each foot in thickness.

I.—Sodium sulphate (Glauber's salt).

A.—*The Union Pacific lakes.*—The following is an extract from a letter written by Mr. Stone, formerly chemist at the Laramie Chemical Works, who was thoroughly familiar with the developments made at these deposits several years ago:

"Replying to your letter of the 5th instant, concerning the Union Pacific soda lakes, I would say that the lakes are situated southwest of Laramie about 13 miles. They are four in number, varying in size from 4 to 40 acres, and usually (always, until within three years) are dry after the middle of August. The water which floods them in the spring comes principally from the melting snow in the small basin which drains into the lakes. They are, however, fed by numerous springs, all of which, with two exceptions, send forth a strong solution of sulphate of sodium. This solution, evaporating under the influence of our dry, windy summer, deposits the salt

* Rock salt is not known to occur in Wyoming. There are numerous salt springs, notably in Crook County, on Salt Creek, and in Uintah County, on Salt River. These springs will not be described under this heading.

which it holds in clear crystals, having the composition indicated in the formula $\text{Na}_2\text{SO}_4, 10\text{H}_2\text{O}$.

"Various soundings have been made into the deposits and measurements obtained, showing that the soda-beds are in some places 40 feet deep. * * *

"In speaking of the springs mention was made of two exceptions to the soda springs. These two are very remarkable, inasmuch as they flow within a few feet of the soda and are of pure sweet water.

"The soil surrounding the lakes, as shown by excavations made at various points near the lakes, is made up in the 15 feet next to the surface, of first, a thin stratum of fine sandy gravel; second, a stratum of hard clay, which occasionally assumes a shaly appearance. This clay varies (to) from 10 to 12 feet in thickness. Below the clay is found a coarse gravel."

The composition of the soda deposits found in these lakes is remarkably uniform, the average composition being shown by the following results, made in our laboratory:

Sodium sulphate.....	44.5
Water.....	54.9
Insoluble matter.....	.5
	99.9

The remaining 1 per cent. is made of a mixture of calcium and magnesium salts. The insoluble matter is principally organic, but usually contains silica and alumina, which have been blown upon the lakes. The water also varies in amount, but is seldom found less than 44 per cent.

A black mud is found in the soda-beds, in layers of from one-half inch to 6 inches in thickness. The composition of this mud we have never determined.

The following analyses from these deposits are taken from the Mineral Resources of the United States:

	1	2	3
Sulphate of soda.....	44.55	41.41	39.78
Water.....	54.98	54.79	59.66
Insoluble matter.....	.47	3.80	.56

From the same page the following analysis is obtained. It is probably of a sample of the "black mud" referred to by Mr. Stone:

Iron, lime, magnesia.....	22.33
Alumina, soda, hydrochloric and sulphuric acids.....	40.82
Silica.....	36.85
Organic matter.....	Trace.

B.—*The Downey lakes*.—These lakes are three in number. They are located on sections 15, 22, and 21, township 13 N., range 75 W. They are between 8 and 9 miles nearly due south of the Union Pacific lakes, and are separated from the latter by the Big Laramie River. On the west there is a stream called Sandy Creek, not more than one-quarter of a mile distant. The divide between this creek and the lakes is very low—probably not over 10 feet. The area of the claims, including the lakes, aggregate 320 acres, of which over 100 acres are occupied by the soda deposits.

These deposits cover an area of over 100 acres, and contain towards the center from 7 to 9 feet of solid sodium sulphate. Analyses and practical tests at the Laramie Glass Works show the soda to be equally pure with that from the Union Pacific lakes.

C.—*The Bothwell lakes*.—These deposits are near the old telegraph road leading northwest from Rawlins, and about 28 miles from that town. The soda is solid and hard and pure, except for mechanically included sand. I understand that the deposits are very thick.

D.—*The Gill lakes*.—This group of lakes is situated in section 26, township 35 N., range 78 W., and is 6 miles north of the Platte River at the old Fiddleback Ranch. I have passed by the latter point twice, but did not then know of the existence of the lakes. They are four in number, and are all located in one claim of 160 acres. Of this area between 80 and 90 acres are covered by the lakes. A number of pits have been sunk to a depth of 12 feet on these lakes, and from one of this depth a hole was bored four feet deeper. The soda has never been pierced. A sample of this soda given me shows it to be very clear and pure. When freshly broken it is clear,

almost transparent. The outside rapidly loses water when exposed to the air. An analysis of this soda gave the following results:

Sodium sulphate.....	94.50
Magnesium sulphate.....	2.52
Sodium chloride.....	0.54
Water.....	1.61
Undetermined and loss.....	.83
	100.00

This sample had necessarily been freely exposed to the air for a long time. The Gill lakes are not only important from the fact that they have very large deposits of sulphate of soda, but also because they are now within 7 miles of the railroad grade, which passes up the Platte.

II.—Deposits of sulphate and carbonate of sodium.

A.—*The Morgan lake.*—The Morgan lake lies in township 28 N., range 88 W., near the northern boundary, and a few miles south of the Sweetwater River.

The pits sunk on the lake, which is dry after August, have never been deeper than 12 feet. In such pits the bottom of the soda has never been struck. Even at a distance of 75 feet from the shore the solid and pure soda is over 12 feet deep. The soda when first taken out is clear and transparent, but like all the other sodas quickly effloresces. It consists of a mixture of carbonate and sulphate of soda in varying proportions, and contains little else than these salts. The samples taken from a depth of 12 feet show more sulphate than samples taken near the surface. The soda of this lake is certainly very great in quantity. Taking the area of the deposit at only 100 acres, and the thickness at but 12 feet, the contents of the deposit would be over 50,000,000 cubic feet.

The remaining deposits of this class are all situated in the Sweetwater Valley near Independence Rock. They are known as the Dupont lakes.

The Wilmington and Wilkes Barre have no solid deposits. The soda is entirely in solution. The following analyses will show the composition of these salts:*

Sample from surface of Omaha claim.

Moisture.....	9.01
Insoluble matter.....	2.61
Sulphate of soda.....	25.75
Chloride of sodium.....	2.13
Carbonate of soda.....	30.62
Bicarbonate of soda.....	30.09
Total.....	100.21

Dried sample from Wilkes Barre claim.

Chloride of sodium.....	1.83
Sulphate of soda.....	39.04
Carbonate of soda.....	59.00
Insoluble matter.....	9.23

Dried samples from New York and Philadelphia claims.

Chloride of sodium.....	1.83	2.04	2.52
Sulphate of soda.....	71.37	44.74	72.40
Carbonate of soda.....	3.10	5.00	5.30
Insoluble matter.....	22.82	47.50	19.03

III.—Magnesium sulphate (epsom salts) and mixtures of magnesium and sodium sulphates.

All of these deposits occur in an inclosed basin 3 miles north of Wilcox, in Carbon County. The lakes, some twenty-six in number, are scattered over the bottom of the basin, and are all contained within a space of not over 2 square miles. In size they vary from not over a fraction of an acre to nearly or quite 100 acres. Many of the

*All of the five analyses here given are taken from the Mineral Resources of the United States, calendar year 1885; chapter on glass materials, by Joseph D. Weeks.

twenty-six lakes are of no importance, either on account of their small size or because they have no deposits in them. Only a few of the more important ones will be described.

A.—The Brooklyn has an area of about 100 acres. It contains a deposit about 7 inches thick of nearly chemically normal magnesium sulphate. The analysis given below shows its composition:

Insoluble residue.....	0.11
Water.....	49.75
Sulphur trioxide.....	33.08
Magnesia.....	16.26
Sodium chloride.....	0.21
Sodium oxide.....	0.43

There are over 2,000,000 cubic feet of the pure salt in this deposit, as well as a large amount in the black mud lying beneath it, that is peculiar to soluble salt deposits.

B.—The Philadelphia lake lies within a few hundred yards of the Brooklyn, and is separated from it by a low flat. It contains both salts, as an analysis given below will show. The deposit away from the shore is 4 to 7 feet thick:

Insoluble residue.....	3.38
Water.....	48.90
Sulphur trioxide.....	31.33
Magnesia.....	15.62
Sodium chloride.....	0.44
Sodium oxide.....	0.07

C.—The Chicago lakes form a group of which the largest is about 10 acres. The maximum thickness developed in any of them is 6 feet. Two analyses show the following composition:

	No. 1.	No. 2.
Insoluble residue.....	0.16	Trace.
Water.....	32.43	33.50
Sulphur trioxide.....	41.19	40.12
Magnesia.....	11.06	11.90
Sodium oxide.....	14.78	12.40

The deposits of the sulphates and of the mixture of the sulphate and carbonate of sodium in Wyoming are of great interest and importance on account of the immense amounts in which they occur, their purity, and the fact that there is a large market for such material when facilities for placing it upon the market, namely, cheap transportation and the manufactories for using the soda at home and making products that will permit transportation to a large market, are available. Already there are important beginnings in the latter direction.

The Wyoming natural sulphate of sodium has only to be dried and it is a superior grade of the salt cake of commerce elsewhere obtained as a product of manufacture from common salt. From the salt cake, soda ash, caustic soda, and various other sodium salts are manufactured. The mixture of the sulphate and the carbonate when dried will answer all the purposes of salt cake and will be somewhat cheaper raw material for chemical works.

The average price paid for salt cake in 1885 at the glass-works throughout the United States was \$16.95 per long ton,* and since it is imported, for the most part, the glass-works of Illinois and in the West generally must have paid more than this by several dollars, probably over \$20 per ton. When it is remembered that the Rock Springs coal is mined, the freight paid to Omaha, sold and retailed at \$6.50 per ton, and that profits are made presumedly upon all these transactions, it certainly seems probable that a profit could be made by the railroads by shipping the salt cake of Laramie City to the Mississippi, a distance not much greater, and allowing it to be sold at prices which would yield a fair profit to the owners and yet compete with the eastern market. Whether the railroad can do this or not will soon be seen, for Wyoming will have in the near future three separate roads well extended within her limits.

The total amount of sodium salts used in this country in 1885 cost \$10,000,000. When the various deposits are reached by the railroads it seems probable that they will be able to help to supply this large market.

The only point in Wyoming where the deposits are utilized is at Laramie City, where there are chemical works for furnishing manufactured products, glass-works, and a soap manufactory. It seems to the writer that it can only be a question of a short time when these and similar enterprises will prove successful.

* Mineral Resources of the United States, calendar year 1885.

WYOMING IRON ORES.

The Platte Cañon hematite deposits.—The analyses given for the ores of this district were all made in the office of Mr. H. B. Hodges, engineer of tests for the Union Pacific railroad. The two samples from the bottom level of the Sunrise mine were taken by the writer in the fall of 1888.

The important bodies of iron ore developed in this district occur in Eureka Gulch and Whalen Cañon. Three classes of deposits may be recognized. (1.) Lenticular masses of ore in the crystalline schists. (2.) Stratified deposits of hematite lying upon the slates, that have resulted from erosion of outcropping masses of ore in early geological time. (3.) Recent superficial mixtures of detritus, consisting of pebbles and fragments of hematite, slate, limestone, etc., forming with finer material the soil about the croppings of the first two classes of deposit.

The hills about these gulches are capped with nearly horizontal strata of the oldest stratified rocks, and it is only in the gulches that the crystalline schists and the contact between them and the "cap rocks" is laid bare. Consequently only a portion of the area liable to contain deposits is uncovered.

The Sunrise mine has been worked for copper, which was found in irregular deposits entirely surrounded by very pure hematite. In prospecting solely for copper ore the hematite has been partially developed.

At the west end of the claim there is much float in pieces of from a few pounds to a few tons' weight. An average sample of this ore gave:

Silica.....	2.40
Ferric oxide.....	94.42
Phosphorus.....	.07
Sulphur.....	none
Titannic acid.....	none
Copper.....	none
Metallic iron (computed).....	66.09

At the main shaft several hundred feet distant much iron ore has been mined and thrown upon a dump. A sample of this ore gave:

Silica.....	1.90
Ferric oxide.....	96.50
Phosphorus.....	trace
Sulphur.....	none
Titannic acid.....	none
Copper.....	none
Metallic iron (computed).....	67.55

The bottom level of the shaft, which is 110 feet beneath the surface, cross-cuts the ore body and shows it to be 60 feet thick on this section. The ore is of two kinds, hard and soft. No. 1 represents an average sample of the hard ore; No. 2 an average of the soft:

	1.	2.
Water of constitution.....	0.47	0.25
Silica.....		13.03
Ferric oxide.....	88.45	83.65
Phosphorus.....	0.02	Trace.
Sulphur.....	None.	Trace.
Titannic acid.....	None.	Trace.
Copper.....	None.	
Metallic iron (computed).....	61.92	58.56

Further to the northeast the Village Belle, Lone Jack, and other claims show some good iron ore. But there has not been sufficient systematic development to show what ore bodies they have or whether the main ore body of the Sunrise extends into this ground without a break or not. It is only shown that they have some good ore in the slates.

South of the Sunrise and across Eureka Gulch a number of short tunnels have been run in on the contact between the slate and the overlying quartzite. Most of these tunnels show much iron ore. Some of it poor in quality, none as good as Sunrise ore. Thus far they have developed no ore bodies in place between slate walls.

The Chicago mining claim is situated in Whalen Cañon; it was discovered a little more than a year ago. The only developments are a short tunnel and a crooked drift connecting it with a shaft. The tunnel is not more than 20 feet in length; it passes through a loose mass of hematite and into a solid body of the same ore; top, bottom,

and sides show iron ore; there can be no doubt but that the ore body is large. The only question, which future exploitation alone can decide, is how large it is. The following are analyses of two samples of this ore. No. 1 is an average of the hard ore from the face; No. 2 of soft ore from the dump:

	1.	2.
Water of constitution	0.35	0.33
Silica	9.12	11.86
Calcic oxide		1.17
Ferrie oxide	89.08	83.93
Phosphorus	Trace.	Trace.
Sulphur	None.	None.
Copper	None.	None.
Titannic acid	None.	None.
Metallic iron (computed).....	62.35	58.75

There are many other points that might be mentioned where there is good float ore and prospect tunnels showing ore. But the deposits already described are the most important yet developed.

From the nature of the stratified deposits alluded to, there is every prospect that other large deposits of hematite, like that of the Sunrise mine, exist in the slates, and that by following the stratified deposits these bodies will be reached.

From the fact that a large portion of the area between the Sunrise and the Chicago claims, which seem to be upon the same belt, is covered by several hundred feet of "cap rock," it is possible that large deposits may yet be found in this district by following pay streaks of ore.

With but little work, and that mostly done in a search for copper ore, it has been shown that, with a little preparation, the district is capable of furnishing a large quantity of ore of very excellent quality, and that it is possible, but not proven, that it will become celebrated as a producer, along with the other great hematite deposits of the United States.

The Rawlins Hematite.—No new developments have been made in this locality for a number of years. It is said by the owners of the mines worked, that in all over 100,000 tons of ore were mined from their claims. Of this a part was used in the manufacture of paint; by far the larger portion was sent to Utah as a flux in silver-lead smelting.

This ore, according to Clarence King, was almost chemically pure. It occurred in irregular lenses between quartzite and limestone, and varied between a few inches and 20 feet or more in thickness. It is said that there is still a good face of ore left in one of the openings.

At a number of other places along the base of Rawlins Mountain the soil covering the strata which contains this deposit is of deep red color, and it is probable that similar deposits would be discovered should a demand for the ore arise. Thus far there is no indication of phenomenally large bodies occurring in this district.

The Hematite of Bradley's Peak.—Bradley's Peak is the culminating point of the Seminoe Mountains. The crest of the peak consists of eruptive rocks, the southern base of metamorphic rocks carrying hematite. Lifted by a great fault into direct conjunctions with the metamorphics is the Laramie or coal bearing group of rocks which lie about the base of the peak.

Upon the first visit to this locality the writer was much disappointed in what he saw compared with what he had heard of the ore bodies. It happened, however, that he did not see at that time the largest and purest deposits, and although he still does not believe that they are the largest in the world, as has been claimed for them, yet he does believe that large and valuable bodies of ore may be developed.

The south base of Bradley's Peak is composed of chloritic schists and ferruginous quartzite cut by dikes of eruptive rocks in many places. The hematite occurs in lenticular bodies in the slates and quartzites. Towards the southeast the streaks are small and as a rule contain much silica, as the following partial analysis, made by Mr. Henry E. Wood, of Denver, will show:

	1.	2.
Metallic iron	55.30	29.5
Oxygen.....	23.91	25.50
Silica	20.10	15.00

Further to the west and across a long ridge running down the mountains there are other much larger deposits of ore. How large, the shafts and tunnels upon the ore do not show, for they do not show the walls of the deposits.

Mr. A. H. Cronkite furnished me with the following analysis of ore from this locality, also made by Mr. Wood:

Metallic iron.....	63.56
Oxygen.....	27.25
Silica.....	2.68
Titannic acid.....	.03
Phosphorus.....	none.
Manganese.....	none.

Mr. Boney Earnest recently sent me a fine piece of iron ore weighing about 150 pounds. He tells me that this ore occurs in a body 60 feet in thickness. The locality beyond that of central Carbon County is not given. No analysis has yet been made of this ore. I would judge that the piece sent me would yield fully 60 per cent. of metallic iron.

Magnetic iron ore has been found as float in large pieces in Crook County. The ore in place has not been found—has not actually been searched for. The quality of this ore has not yet been determined. Clay iron ore is abundant in many places in the shales of the Colorado group. It is so common that it attracts but little attention and little of it has been developed. There can be no doubt but that large quantities of it could be furnished should a demand for it arise.

OTHER MINERAL RESOURCES OF WYOMING.

1. *Resources of the Black Hills, Crook County.*

The Black Hills, lying for the most part in Dakota, are yet partly in Crook County, Wyo. In general type its geology is very simple, being merely an elliptical uplift, accompanied by the usual mountain sculpture, which has removed all the stratified rocks from the center and exposed the granites and schists, while the stratified rocks occur around this nucleus, in the order of their age and superposition, in belts or rings of irregular width.

In other words, the center of the hills consists essentially of granites and other crystalline rocks; and, proceeding outward toward the plains in any direction, definite belts of quartzite, limestone, red beds, sandstone, shale, and finally shales and sandstones are successively encountered, and, as they dip more steeply than the slope of the hills, each belt disappears beneath the surface and the next succeeding rock formation.

In addition to this very simple structure there is, however, another complicating feature, namely, the occurrence of numerous dikes and intrusions of eruptive rocks which cut the slates and granites in all directions and burst through the stratified rocks as high up as the top of the red beds. These eruptives in the crystalline slates of Wyoming occur only as dikes which outcrop, but do not form any prominent hills above the level of the surrounding country. But where they have burst up through the stratified rocks they form hills, even mountains.

In Wyoming Sundance Mountain, Inyan Kara, the Devil's Tower, Black Buttes, Missouri Buttes, and the Bear Lodge Mountains are all formed by such projecting masses of eruptive rock. These alone form a separate series of prominences and break the otherwise simple structure of the Black Hills uplift proper.

I have dwelt so much upon the structure of the hills because all of the various belts of rock show marked peculiarities and with one exception may be recognized by the most careless observer. Moreover, as they differ in appearance they differ in the character of the actual and possible mineral deposits that they are liable to contain. Taking the belts in succession, the following mineral products have been found in them in quantities sufficient to attract attention:

	Class of rock.	Mineral substances found.
1	Crystalline nucleus.....	Gold, tin ore, iron ore.
2	{Quartzite } {Limestone}.....	Lead, silver, gold.
3	Red beds.....	Salt springs, building stone, gypsum, limestone, fire-clay coal.
4	Dakota sandstone.....	Coal, lignite, fire-clay, petroleum.
5	Colorado and Fox Hill shales and sandstone.	Petroleum, clay, impure coal, clay iron ore.
6	Laramie sandstones.....	Lignite.

The crystalline nucleus.—There is a small and apparently detached area of schists lying a little north of west of Sundance, probably in townships 51 and 52, ranges 59 and 60. Consequently the boundary line between Wyoming and South Dakota cuts through it and divides it into two portions, of which the smaller lies in Wyoming. In all it probably has an area of about 60 square miles.

These rocks are cut by a number of deep gulches, of which Beaver Creek, Potatoe and Bear Gulches (in Dakota), Sand Creek, Mallory and Spotted Tail Gulches (in Wyoming) are the most important. The most prominent mountain, Nigger Hill, lies between Bear Gulch and Sand Creek.

The rocks may be divided into two classes, schists and eruptives, the latter occurring as dikes in the former. The schists are both micaceous and chloritic. They are thoroughly crystalline though fine grained. Their foliation is distinct and perfect. They have an average trend of magnetic north and south, and dip to the west, usually at angles between 45° and 60° . In places they contain segregated bands of quartz of considerable size. These quartz bodies lie parallel to the foliation of the schists, are very pure, white, compact, and glassy, and, as far as known, do not carry appreciable quantities of gold.

The eruptive rocks are of two classes: (1) Trachytes and diorites (?), which are not known to carry any mineral of commercial importance. (2) Peculiar dikes of coarse-grained granitic rock which carry some tin ore.

The vein tin deposits.—The granitic dikes are very abundant, and several hundred mining claims have been located upon them. They almost always lie parallel to the bedding planes of the schists, but one instance to the contrary being noted. They vary in thickness from 2 to 50 feet, and considerable variation is sometimes evident in one and the same dike.

The vein rock consists of quartz, feldspar, and mica, and is usually very coarse-grained, plates of mica several inches long being not uncommon. As accessory constituents it contains cassiterite, tourmaline, garnet, and other minerals whose exact nature have never been determined. The cassiterite occurs in imperfect crystals (rare), granules, and grains scattered through all three of the chief constituents of the matrix. Pieces as large as a hazel-nut are not uncommon, but usually it is finer, much of it being scarcely visible to the naked eye, and much of it only to be seen with the aid of a lens.

These deposits are the first of the kind the writer has ever seen, and he scarcely considers himself able to give a competent and exhaustive report upon them. Moreover, he has not yet made any tests to determine the amount of tin the vein rock may be expected to carry. It is claimed that the deposits have been examined by competent and experienced men and that samples carefully taken yielded from 2 to 6 per cent. metallic tin; that even those taken which showed no visible cassiterite yielded from 2 to 4 per cent. of metallic tin. If this is the case and the position of the deposits for working the enormous quantity of ore, and the sufficient water supply is considered it seems probable that in the future mines will be opened up and works erected for extraction of the ores and separation of the cassiterite from the gangue.

The stream tin deposits.—Stream tin has been found in all of the gulches that cut the granitic dikes. In 1885 it was recognized by an Australian miner; before that time it was regarded as "black sand" (magnetite). Some large pieces, weighing several pounds, have been found, but most of it is in grains of small size. Some of the gulch miners have saved a part of the stream tin that has been caught with the gold in the sluice-boxes and in this way have saved a number of tons of it; and it is possible that there is sufficient to pay for working the gulch gravels if approved methods of washing were adopted. This could be easily proved by careful tests across the gulches at different points. The stream tin is pure, and when carefully washed will yield 65 to 70 per cent. of metallic tin by a common process of reduction.

Placer gold.—This district was celebrated for its rich placers and coarse gold at the time of the Black Hills excitement. All of these placers are now practically exhausted, and only a few men are still at work gleaning pay from old ground. The annual yield of both the Wyoming and Dakota gulches now amounts only to a few thousand dollars.

Vein gold.—Hitherto all efforts to discover the source of the placer gold have been fruitless. Not only have no pay mines been discovered, but gold has not been found in ever so small a quantity, in deposits that might prove a common source for all the placers. On Mineral Hill in Wyoming there has been some developments made upon leads which have yielded rich assays, but thus far there are no pay mines. As far as I know no attention has been paid to certain pyritiferous eruptive rocks whose occurrence is broad-spread over the district. These might possibly prove to be the source of the placer gold, as was largely, if not altogether, the case in California Gulch, near Leadville.

The quartzite and limestone.—Carbonate Hill lies to the west of the Black Buttes and immediately behind them. It consists of the older stratified rocks cut through

by several kinds of eruptives. Upon the west side of the hill certain siliceous limestones dip gently to the southeast until they are abruptly broken by a dike of yellow rock, probably a porphyry. Upon the line of contact between the limestone and porphyry a shaft has been sunk and a tunnel run which has produced some galena associated with a flint matrix. This is upon the Steel Galena claim. An adjoining claim, called the Gray Carbonate, has a small body of excellent carbonate of lead ore lying in the limestone just east of the porphyry. About \$5,000 has been expended upon this claim very foolishly and with no idea of methodical development, with the result that little more can be seen of the nature of the deposit than was evident before work was commenced. About 40 to 50 tons of high-grade lead ore have been gouged out and objectless shafts and tunnels made, but it has not been shown whether there is merely an isolated lens of ore or a deposit worthy of a small mine. In my opinion the work upon this claim should be confined to prospecting the contact between the limestone and the porphyry.

The carbonate ore will yield from 30 to 60 per cent. of lead, and is said to assay from 10 to 30 ounces in silver. It would prove a very desirable smelting ore.

I have seen no other prospects for silver and lead in the Wyoming Black Hills that are worthy of the name. There is, however, quite a large area in which the quartzites and limestones are in conjunction with eruptive rocks, and I regard such contacts as favorable for the existence of ore deposits.

The red beds.—I have only space to mention the salt springs and fire-clay deposits of the Jura-Triassic formations.

Some years ago salt springs were located and evaporating-pans built on Salt Creek, about 30 miles south of Sundance. The salt made was sold at the springs at \$40 per ton and shipped into Deadwood. There are many springs rising over an acre or more of ground. The brine is said to contain about 20 per cent. of salt, and estimates (not my own) place the capacity of the spring at 60 tons per day. The springs come to the surface near the top of the Triassic rocks.

Near the top of the Jurassic there is a series of clays and marls that average about 100 feet in thickness. They are very persistent and regular in their occurrence. Usually they may be easily recognized by a purple band 30 feet or more in thickness near the center. Mr. Hemingway, the superintendent of the Mount Zion coal mines, informs me that certain of these clay strata make an excellent fire-brick.

This horizon of the Jurassic is also known to contain impure and thin seams of coal. As far as I have seen them they are so impure as to be worthless. Recent rumors have reached me that good coal has been found in this horizon on Hay Creek. I wait for the report to be confirmed.

The coals and petroleums of Crook County, occurring in the Dakota and Colorado groups of the Cretaceous formation, are described elsewhere under the appropriate general headings.

2. Resources in other portions of Wyoming.

Gold and silver.—Little has been done in precious-metal mining during the past year. Besides the gulch mining in Crook County, Mr. Emile Granier has continued his improvements in preparation for extensive hydraulic mining near Atlantic City. He is now constructing a reservoir dam at Christina Lake.

The Keystone mine, on Douglas Creek, Albany County, has recently been sold, and the new owners are building a mill and developing the mine for production. They expect to obtain an average of \$20 per ton upon the ore mined.

Copper.—A little more than a year ago the Sunrise mine, at Hartville, was leased and opened, and the ore extracted was smelted at Fairbank, on the Platte River. The ore in sight was worked out of the several thousand tons which were mined, and the lease was abandoned.

The copper ore of this mine occurs in irregular masses in hematite. From the nature of the deposit it is impossible to say where another similar body occurs. Drifts run under the ore body do not show a copper stain, nor does the hematite contain even a trace of copper. Were the iron deposits worked it is possible that similar bodies would be found, but in what direction or how far from the old ore body it is impossible to say.

The Sparks and Green Mountain Boy claims both show good ore, the latter containing much silver. Neither of these mines has been actually developed. Many other locations are held in this vicinity. Most of them are prospectively of little value. None of them have any considerable developments. The Michigan mine, of Muskrat Cañon, shows immense quantities of low-grade copper ore with a siliceous matrix. It has recently been purchased, and is now being opened up. It is proposed to begin shipments with 20 tons of ore per day and to increase the output as the mine warrants. The ore is hauled in wagons to Lusk and there shipped to Pennsylvania by rail. It is smelted with highly basic ores.

Building stone.—The Rawlins building stone is taken from a quarry about 4 miles

from the railroad. It occurs in immense amounts, that may be easily and cheaply taken out. The stone is of a uniform gray color, is massive, free from a tendency to cleave in any particular direction, is free from ferruginous stains and from concretions of any sort. It is soft when mined, and is an excellent working stone. It hardens on exposure and stands well in a building. It is used in Nebraska and Wyoming. The capitol at Cheyenne is built of this stone.

A new quarry opened near Laramie furnishes brick-red and pink sandstones. I understand that the owners have a contract to deliver two car loads of this stone per week at points in Nebraska, the contract to run for ten years. Other good building stones are obtained from the Carboniferous gray sandstones and drab limestones near Laramie. They furnished the stone for the university and other Laramie buildings. A handsome light-gray or white sandstone is quarried near Cheyenne and used in buildings in that city. It is a fine working stone, and makes a very handsome trimming in large buildings. On Horse Creek both white and red sandstones are found. The stone is handsome and strong. Thus far little of it has been used, owing to the recentness of its discovery.

At Iron Mountain a switch has been laid to an outcrop of massive gray sandstone. The rock is mined in large blocks and used by the railway company for heavy foundations.

A beautiful red sandstone, firm even in grain, color, and texture, and capable of receiving elaborate ornamental cutting, is being quarried near Glen Rock, in Converse County. Contracts have been recently made to deliver this stone in Omaha and Lincoln.

Building stone is also quarried as demand for it arises at many other places in Wyoming. The occurrence of excellent and handsome stone in many undeveloped localities is well known. The great ledge of handsome red sandstone near Lander deserves especial mention.

Marble.—The marble deposits have never been developed. They occur in the Platte Cañon district and at various points in the Laramie and Medicine Bow Mountains. From Fairbank, on the Platte River, to Muskrat Cañon there are outcrops of a great belt of marble at intervals. In many places it is exceedingly silicious and contains bands and conculions of quartz. At some points it is practically free from silica. In composition it is dolomite. Though crystalline, it is very fine grained. In color it is white, pink, grayish-blue, and mottled. In most places it is cut by numerous joints and bedding planes. It occurs in the largest blocks in Muskrat Cañon.

A large outcrop of dolomitic marble occurs on the Laramie River, 12 miles west of Uva. This marble is pure white, white streaked with gray, and gray. I have seen specimens weighing several hundred pounds of snowy whiteness. It is medium to coarse crystalline in texture. It is said to be massive and remarkably free from joints.

Similar marble is said to occur near Lookout Station, in Albany County, and some marble has been taken from it as specimens. The other localities have never been prospected.

Gypsum.—The great abundance of gypsum in the red beds of the West, wherever they occur, is well known. It is found in thick strata, often very pure, at many places. At Laramie it is proposed to mine a large deposit of gypsum and manufacture it into plaster of Paris. A 50-ton plant is now being built for this purpose.

Limestone and Sand.

The occurrence of very pure varieties of these rocks is common. Besides the use of limestone for mortar at various points it has no demand except at Laramie, where it is used for building purposes and glass-making. The limestone used for the latter purpose is obtained 3 miles east of the town. The following analysis of a sample of it was furnished by the glass company:

Calcium carbonate.....	98.83
Magnesium carbonate	0.45
Iron carbonate	0.12
Iron bisulphide.....	0.02
Alumina	0.10
Silica.....	0.43
Moisture.....	0.05
	100.00

I have no analysis of the glass-sand which is taken from the same locality. Practical tests show that it will make exceptionally white window-glass.

The limestone and sand are hauled in wagons a little over 3 miles to the glass-

works. The soda is hauled 15 miles by rail. The soda as it is mined is dried and mixed in the proper proportions with the crushed limestone and unwashed sand.

Asbestos.—This mineral is found in the Laramie, Seminoe, and Medicine Bow Mountains, and elsewhere. I have received merchantable samples. The amount of the mineral that might be produced is not known.

Clays.—Little is known of the Wyoming clays as yet. Ordinary brick-clays are everywhere abundant. Other and more valuable clays also occur in quantity. Clay from Rock Creek is now being shipped to the East, and fire-brick are being made from the Mount Zion fire-clays. Both of these varieties have a wide-spread occurrence.

Mica, plumbago, sulphur, and other minerals are known to occur in quantities. They either have not been sufficiently developed or the writer has not examined them, and no description of them can now be given.

MILITARY POSTS IN WYOMING.

There are in the Territory the following forts, depots, and encampments where United States troops are stationed:

Fort D. A. Russell, near Cheyenne, full regimental post.

Cheyenne Depot, near Cheyenne, the quartermaster's department.

Fort Laramie, on the Laramie and North Platte Rivers, 95 miles north of Cheyenne, a large, complete fort, and the headquarters of a regiment, recently ordered abandoned.

Fort McKinney, on Clear Creek, at the base of the Big Horn Mountains, near the center of Johnson County and 2 miles from Buffalo, its county seat. This is a large post with regimental headquarters.

Fort Washakie is on Wind River, near the center of Fremont County, a short distance from Lander, the county seat, and has three or more companies.

Fort Bridger is on Black's Fork of Green River, some 10 miles south of Carter Station, on the Union Pacific Railway, in Uinta County, and usually has about five companies.

At Rock Springs, near the coal mines, there is a post with two companies.

At Mammoth Hot Springs, in Yellowstone National Park, two companies of cavalry are stationed.

Forts Sanders and Fetterman have been abandoned as military posts.

POST-OFFICES IN THE TERRITORY OF WYOMING.

[Corrected from the books of the Post-Office Department, July 1, 1889. Offices in *italics* are money-order offices. Those marked with the asterisk (*) are international as well as domestic money-order offices.]

Town.	County.	Town.	County.
Almond	Sweetwater.	Bitter Creek.....	Sweetwater.
Almy	Uinta.	Bonanza	Johnson.
Afton	Do.	Bordeaux	Laramie.
Archer.....	Laramie.	Box Elder.....	Converse.
Arland.....	Fremont.	Bryan.....	Sweetwater.
Ariosa	Laramie.	Buford	Laramie.
Aspen	Uinta.	Buffalo.....	Johnson.
<i>Atlantic City</i>	Fremont.	Burlington.....	Crook.
Bagg's	Carbon.	Burnt Fork	Sweetwater.
Banner.....	Sheridan.	<i>Carbon</i>	Carbon.
Beaver.....	Converse.	Carlile	Crook.
Beckton.....	Sheridan.	Carter.....	Uinta.
Bennett.....	Carbon.	Casper.....	Carbon.
Bessemer.....	Do.	Centennial	Albany.
Beulah	Crook.	<i>Cheyenne*</i>	Laramie.
Big Horn.....	Sheridan.	Chug Water	Do.
Big Piney.....	Uinta.	Clare.....	Converse.
Big Red	Sheridan.	Cokeville	Uinta.
Bingham.....	Do.	Collins	Carbon.

Post-offices in the Territory of Wyoming—Continued.

Town.	County.	Town.	County.
Cooper.....	Albany.	Lovell.....	Fremont.
Corbett.....	Fremont.	Lusk.....	Converse.
Cummins.....	Albany.	Lyons.....	Fremont.
Converse.....	Laramie.	Mammoth Hot Springs.....	National Park Res ervation.
Dallas.....	Fremont.	Manville.....	Converse.
Davis Ranch.....	Laramie.	Medicine Bow.....	Carbon.
Dayton.....	Johnson.	Meeteetse.....	Fremont.
Deer Creek.....	Albany.	Mikado.....	Crook.
Derby.....	Fremont.	Millersburgh.....	Laramie.
Dexterville.....	Carbon.	Miners Delight.....	Fremont.
Dixon.....	Do.	Moran.....	Laramie.
Douglas.....	Converse.	Myersville.....	Fremont.
Dry Piney.....	Uinta.	New Fork.....	Do.
Durbin.....	Carbon.	Ohlman.....	Sheridan.
Egbert.....	Laramie.	Oil City.....	Carbon.
Elk Mountain.....	Carbon.	Ono.....	Johnson.
Embar.....	Fremont.	Otto.....	Fremont.
Eothen.....	Crook.	Opal.....	Uinta.
Ervay.....	Carbon.	Own.....	Albany.
Evanston.....	Uinta.	Pass.....	Sheridan.
Fairbank.....	Laramie.	Patrick.....	Laramie.
Ferris.....	Carbon.	Percy.....	Carbon.
Fontenelle.....	Uinta.	Phillips.....	Laramie.
Forks.....	Crook.	Piedmont.....	Uinta.
Fort Bridger.....	Uinta.	Pine Bluff.....	Laramie.
Fort Fetterman.....	Converse.	Powder River.....	Johnson.
Fort Fred Steele.....	Carbon.	Raw Hide Butte.....	Laramie.
Fort Laramie.....	Laramie.	Rawlins*.....	Carbon.
Fort McKinney.....	Johnson.	Red Bank.....	Johnson.
Fort Russell.....	Laramie.	Red Cañon.....	Uinta.
Fort Washakie.....	Fremont.	River Side.....	Johnson.
Fossil.....	Uinta.	Rock Creek.....	Albany.
Freeland.....	Carbon.	Rockdale.....	Carbon.
Glenrock.....	Converse.	Rock Springs*.....	Sweetwater.
Goshen.....	Laramie.	Rongis.....	Fremont.
Granger.....	Uinta.	Saint Stephen's.....	Do.
Granite Cañon.....	Laramie.	Salem.....	Laramie.
Green.....	Carbon.	Saratoga.....	Carbon.
Green River.....	Sweetwater.	Seminole.....	Do.
Harley.....	Fremont.	Shawnee.....	Converse.
Ham's Fork.....	Uinta.	Shell.....	Johnson.
Hartville.....	Laramie.	Sheridan.....	Sheridan.
Hat Creek.....	Converse.	Sherman.....	Albany.
Hatton.....	Albany.	Shoshone Agency.....	Fremont.
Hay Creek.....	Crook.	Sibillee.....	Albany.
Hilliard.....	Uinta.	Sillem.....	Uinta.
Hillsdale.....	Laramie.	Silver Crown.....	Laramie.
Hubert.....	Do.	Slater.....	Carbon.
Hulett.....	Crook.	South Bend.....	Laramie.
Hyatville.....	Johnson.	South Pass City.....	Fremont.
Irez.....	Converse.	Springs Creek.....	Johnson.
Inyan Kara.....	Crook.	Spring Hill.....	Albany.
Iron Mountain.....	Laramie.	Sulphur.....	Carbon.
Islay.....	Do.	Sundance.....	Crook.
Kearney.....	Johnson.	Swan.....	Carbon.
La Belle.....	Crook.	Sweetwater.....	Do.
Labonte.....	Converse.	Theresa.....	Converse.
Lamar.....	Carbon.	Tie Siding.....	Albany.
Lander.....	Fremont.	Tolland.....	Converse.
Laramie City*.....	Albany.	Torrey.....	Fremont.
Leah.....	Do.	Trabing.....	Johnson.
Leo.....	Carbon.	Uva.....	Laramie.
Linde.....	Crook.	Voorhees.....	Converse.
Little Bear.....	Laramie.	Wendover.....	Laramie.
Little Horse Creek.....	Do.	Wood's*.....	Albany.
Little Powder.....	Crook.	Wheatland.....	Laramie.
Logan.....	Johnson.	Wright's Ranch.....	Uinta.
Lone Tree.....	Uinta.	Wringer.....	Crook.
Lookout.....	Albany.	Wyoming.....	Albany.
Lost Cabin.....	Fremont.		

STAGE LINES.

The following is a list of the stage lines in operation in Wyoming:

From—	To—	From—	To—
Bordeaux.....	Lusk.	Buffalo.....	Spring Creek.
Wendover.....	Douglas.	Etchita.....	Buffalo.
Douglas.....	Buffalo.	Rock Creek.....	Fetterman.
Buffalo.....	Sundance.	Rock Creek.....	Buffalo and Sheri-
Rawlins.....	Lander.		dan.
Rawlins.....	Saratoga.	Custer*.....	South into Wyo-
Fort Steele.....	Saratoga.		ming.
Rawlins.....	White River.	Miles City*.....	South into Wyo-
Lusk.....	Hat Creek.		ming.
Casper.....	Rongis.	Billings*.....	Lander, Wyo.

* On Northern Pacific Railroad in Montana.

ASSESSED VALUATION.

The following tables give the assessed value of each county since 1870:

It will be noticed that there is a falling off in the assesment of several counties during recent years. This, in most cases, was on account of the formation of new counties, causing a division of the property, and in several cases the depreciation of live-stock. Uinta County is the only county remaining that has not been divided since its organization. Fractions of dollars are omitted.

LARAMIE COUNTY.

Years.	Cattle.		Horses.		Sheep.		Railroad property.	All other property.	Total valuation.
	No.	Value.	No.	Value.	No.	Value.			
1870.....	941	\$35,070	72	\$6,828	3	\$30	\$606,785	\$1,137,752	\$1,786,465
1871.....	5,361	147,427	169	8,323	579	1,447	627,355	885,731	1,670,283
1872.....	8,558	128,370	411	30,825	6	24	734,276	1,301,951	2,195,446
1873.....	11,375	227,500	677	50,775	2,199	8,796	737,685	1,080,588	2,105,344
1874.....	28,659	462,453	935	46,685	10,000	15,965	733,810	1,329,604	2,588,517
1875.....	34,988	453,193	1,471	72,465	22,322	36,581	796,221	1,689,675	3,048,135
1876.....	45,525	506,238	1,687	62,824	33,564	42,264	657,655	1,819,484	3,088,465
1877.....	58,101	653,763	1,691	62,700	36,062	49,776	689,295	2,040,252	3,495,786
1878.....	73,374	805,718	2,500	75,610	41,930	55,644	746,280	2,135,225	3,818,477
1879.....	97,641	1,062,013	2,888	102,160	56,941	71,467	764,275	1,998,504	3,998,419
1880.....	113,466	1,379,003	3,530	123,700	79,994	119,491	763,466	1,427,907	3,813,567
1881.....	141,630	1,659,056	5,359	173,970	66,559	99,365	764,827	1,381,405	4,078,623
1882.....	190,963	2,427,545	7,245	234,675	85,221	149,145	788,455	1,632,770	5,232,690
1883.....	244,486	3,637,380	9,546	318,515	90,763	162,620	799,007	2,427,533	7,345,055
1884.....	283,194	4,261,445	11,946	392,355	57,978	86,995	801,355	2,954,962	8,497,112
1885.....	277,072	4,141,440	11,904	395,255	36,650	39,650	801,041	3,303,594	8,680,980
1886.....	233,539	3,930,714	13,502	495,825	41,680	52,210	811,698	3,786,257	9,076,704
1887.....	227,792	3,041,209	15,974	582,785	35,399	54,193	1,077,464	5,384,285	10,139,936
1888.....	183,437	2,109,963	15,065	507,020	29,768	45,067	778,140	6,945,447	10,385,637
1889.....	91,930	1,070,029	14,561	451,025	32,010	49,882	778,141	5,577,794	7,926,871

ALBANY COUNTY.

Years.	Cattle.		Horses.		Sheep.		Railroad property.	All other property.	Total valuation.
	No.	Value.	No.	Value.	No.	Value.			
1870	6,618	\$98,390	244	\$14,800	2,500	\$3,000	\$1,024,024	\$257,557	\$1,397,771
1871	13,545	285,927	958	32,005	11,585	23,329	1,185,464	283,958	1,810,683
1872	12,929	236,059	1,767	64,555	13,046	29,728	1,097,474	470,631	1,898,447
1873	8,558	150,475	1,768	65,210	10,117	22,386	1,100,974	624,664	1,963,709
1874	7,440	125,120	2,075	67,590	11,291	22,427	1,131,332	539,808	1,886,277
1875	9,307	166,668	2,396	70,985	14,787	36,963	1,040,335	966,979	2,281,930
1876	7,457	100,062	1,795	58,300	21,696	42,019	1,045,933	1,018,665	2,264,979
1877	10,328	165,083	2,079	65,530	26,190	49,058	1,050,691	892,028	2,222,390
1878	12,358	160,772	1,965	56,860	26,237	51,227	1,050,995	1,856,247	3,176,101
1879	50,560	502,622	2,284	63,030	43,358	78,106	1,058,915	1,850,041	3,552,714
1880	47,350	544,660	2,181	71,380	59,737	102,870	1,006,635	881,929	2,607,474
1881	58,855	669,199	3,945	95,390	52,019	101,038	1,046,279	999,240	2,911,146
1882	60,935	948,989	3,869	100,495	81,648	162,546	1,171,322	1,184,235	3,567,587
1883	71,264	1,079,345	5,113	143,845	101,485	177,598	1,116,576	1,433,227	3,945,091
1884	102,448	1,549,140	7,325	206,135	115,800	175,625	951,175	1,446,204	4,328,279
1885	91,985	1,409,940	7,714	229,900	83,564	127,804	950,554	1,479,616	4,197,814
1886	91,820	1,515,226	9,108	322,002	90,395	115,060	952,440	1,513,037	4,417,765
1887	75,011	1,081,192	10,217	359,170	70,113	106,045	965,883	2,380,666	4,892,956
1888	36,090	426,788	7,932	244,696	54,239	91,915	920,523	2,344,362	4,028,124
1889	33,149	379,559	8,543	283,185	49,439	80,127	920,524	2,458,799	4,122,194

CARBON COUNTY.

1874	2,017	33,910	220	11,120	8	68	713,915	155,773	914,746
1875	3,266	53,949	456	11,215	5	22	721,352	153,675	946,213
1876	3,331	44,218	468	18,275	5	41	691,923	201,119	955,576
1877	5,000	75,000	500	20,000	15	50	713,319	191,031	1,000,000
1878	20,168	258,633	1,036	26,190	1,682	3,379	739,688	180,404	1,208,294
1879	46,338	507,168	1,763	40,639	1,512	3,024	742,570	231,454	1,506,855
1880	72,055	943,527	2,361	62,672	4,445	11,106	782,825	202,939	2,003,069
1881	66,994	814,086	3,037	80,480	16,045	32,090	784,140	303,203	2,013,999
1882	67,850	1,032,170	3,247	95,390	28,887	71,624	809,592	554,992	2,563,768
1883	92,520	1,973,140	3,325	100,584	58,587	146,467	820,344	622,833	3,663,368
1884	114,869	2,297,380	4,771	135,870	52,065	104,130	821,000	644,574	4,603,054
1885	123,676	2,530,455	6,311	175,400	66,136	117,202	821,814	1,181,819	4,829,700
1886	126,832	2,036,008	7,832	229,740	74,951	96,152	822,864	903,297	4,088,061
1887	98,203	1,352,489	8,425	250,771	101,386	165,629	834,342	1,494,549	4,097,780
1888	90,382	965,783	9,928	271,033	128,985	257,144	844,742	1,443,852	3,782,554
1889	69,086	760,117	10,978	290,033	154,613	270,175	910,638	1,533,065	3,764,028

CONVERSE COUNTY.

1888	90,208	\$956,792	5,955	\$163,281	4,187	\$6,404	\$501,180	\$423,859	\$2,051,516
1889	79,141	880,621	5,547	145,990	3,433	5,230	588,897	525,626	2,146,364

SWEETWATER COUNTY.

1870	584	28,535	102	8,360	487	1,751	1,290,042	512,133	1,840,821
1871	781	26,735	162	12,255	160	500	1,290,042	308,033	1,637,565
1872	1,650	37,495	253	15,280	124	496	1,290,042	254,640	1,597,953
1873	2,872	76,896	378	20,225	120	480	1,306,523	43,276	1,447,400
1874	3,650	93,687	615	22,010	531	1,328	1,225,591	193,783	1,536,399
1875	6,115	108,341	737	28,860	600	1,800	1,478,974	247,281	1,865,256
1876	8,274	136,857	949	27,770	718	1,636	1,488,902	250,925	1,906,090
1877	11,380	164,557	978	27,300	785	1,966	1,554,499	169,045	1,917,367
1878	13,846	141,261	1,335	33,855	900	1,600	1,552,902	209,347	1,938,965
1879	18,419	186,545	1,430	38,880	1,830	3,660	1,473,924	238,388	1,941,397
1880	25,945	311,335	1,626	46,101	4,718	9,435	1,516,625	199,913	2,083,509
1881	36,137	431,392	2,247	80,985	11,926	23,852	1,538,757	202,835	2,277,821
1882	53,675	809,445	2,638	117,240	35,935	81,487	1,586,553	176,750	2,771,475
1883	52,505	1,045,776	3,617	126,492	37,383	85,162	1,545,709	345,144	3,148,274
1884	9,136	196,561	1,795	59,755	17,034	38,364	1,546,219	282,430	2,123,329
1885	19,947	419,931	2,943	88,701	22,318	52,223	1,527,720	390,100	2,478,675
1886	22,578	374,835	3,357	92,520	29,856	38,187	1,527,617	466,466	2,499,625
1887	23,517	322,801	2,882	86,200	48,924	74,555	1,496,091	1,032,407	3,032,054
1888	15,898	178,543	2,965	81,785	41,383	72,386	1,496,101	1,211,317	3,040,126
1889	16,862	188,387	3,450	92,285	44,320	77,756	1,496,102	1,287,704	3,142,234

UNITA COUNTY.

Years.	Cattle.		Horses.		Sheep.		Railroad property.	All other property.	Total valuation.
	No.	Value.	No.	Value.	No.	Value.			
1873	3,471	\$73,839	391	\$17,540	348	\$787	\$783,200	\$302,903	1,178,269
1874	3,708	68,265	702	27,210	298	643	736,825	389,019	1,221,962
1875	2,836	59,270	562	23,270	167	575	708,600	560,388	1,352,103
1876	3,988	63,530	571	18,375	145	653	872,042	504,865	1,459,465
1877	3,801	50,397	748	23,400	271	737	874,825	453,786	1,403,145
1878	5,359	66,870	642	22,130	425	1,104	940,229	433,169	1,463,502
1879	9,117	94,012	744	29,020	1,053	2,116	823,800	406,478	1,355,426
1880	9,681	96,220	806	24,285	22,488	44,976	824,000	360,242	1,349,723
1881	11,912	139,386	1,253	34,610	23,132	46,190	825,556	400,363	1,446,105
1882	16,017	193,460	1,631	50,750	65,117	130,378	1,043,460	769,444	2,187,492
1883	14,998	227,055	1,849	53,345	55,245	110,892	1,320,660	520,313	2,232,265
1884	15,215	307,850	2,288	75,043	42,484	85,648	1,317,256	446,355	2,232,152
1885	15,670	314,387	2,326	73,917	52,325	104,999	1,349,884	533,301	2,376,489
1886	15,154	322,921	2,973	92,575	67,057	85,852	1,347,160	731,888	2,480,396
1887	21,443	297,532	3,697	102,072	86,877	132,215	1,367,931	874,356	2,774,106
1888	23,454	266,209	4,836	136,821	89,525	180,426	1,368,296	1,014,827	2,966,579
1889	24,034	272,124	5,080	139,188	95,673	168,946	1,368,295	1,070,612	3,019,166

SHERIDAN COUNTY (FARM LANDS).

1888	36,788	424,340	5,506	170,185	3,739	5,626	420,335	170,469	1,190,957
1889	29,350	334,283	6,248	191,242	4,981	8,956	390,201	304,074	1,228,756

FREMONT COUNTY.

1884	64,228	\$1,366,160	4,089	\$135,872	33,000	\$66,000	.....	\$132,792	\$1,700,824
1885	76,324	1,526,480	5,389	153,100	49,128	79,298	.....	190,362	1,949,241
1886	85,749	1,390,916	7,785	246,395	50,970	64,328	.....	329,819	2,031,458
1887	86,260	1,203,576	6,428	259,375	55,527	86,411	.....	443,638	1,993,000
1888	74,390	843,647	7,901	214,460	48,045	79,651	.....	466,360	1,604,118
1889	75,772	872,022	8,710	259,258	68,528	122,478	.....	575,980	1,819,738

JOHNSON COUNTY.

1881	67,351	\$1,047,668	1,774	\$54,161	665	\$1,325	.....	\$156,827	\$1,259,981
1882	88,778	1,492,467	2,129	71,624	902	1,804	.....	157,719	1,723,614
1883	138,639	2,282,950	3,731	136,372	909	1,818	.....	207,349	2,628,489
1884	164,481	2,711,725	5,786	190,405	8,900	17,800	.....	504,178	3,424,108
1885	174,172	2,919,426	8,476	373,742	6,285	12,581	.....	475,541	3,781,290
1886	157,931	2,578,913	9,900	307,420	7,709	9,857	.....	634,076	3,530,266
1887	141,286	1,711,719	11,935	387,036	8,583	10,682	.....	1,238,984	3,348,421
1888	91,740	1,048,279	11,621	340,018	7,849	11,915	.....	1,280,003	2,680,305
1889	79,141	884,592	7,831	220,335	4,079	6,194	.....	852,527	1,963,648

CROOK COUNTY.

1885	115,942	\$2,126,544	4,982	\$166,309	4,531	\$6,793	.....	\$123,412	\$2,423,058
1886	155,518	2,501,592	6,794	199,610	6,379	8,187	.....	187,117	2,896,506
1887	85,136	1,175,842	7,100	273,293	4,979	7,703	.....	359,519	1,811,357
1888	82,550	933,368	8,413	256,002	3,536	7,015	.....	412,240	1,608,625
1889	124,118	1,372,927	10,831	314,828	2,915	4,813	.....	585,920	2,278,496

Statement showing assessed valuation of all property, by counties, in Wyoming, 1889.

	Laramie.	Albany.	Carbon.	Sweet-water.	Uinta.
Agricultural land and improvements.....	\$1,567,021	\$780,290	\$816,461	\$520,431	\$564,804
Town lots and improvements.....	2,070,976	1,126,714	233,697	325,697	237,435
Neat cattle.....	1,070,029	379,559	760,117	188,387	272,124
Horses.....	451,025	283,185	290,033	92,285	139,188
Mules and asses.....	11,485	9,995	18,595	10,500	4,855
Sheep.....	49,882	80,127	270,175	77,756	168,946
Swine.....	610	795	615	70	580
Musical instruments.....	9,722	8,165	4,837	4,635	6,426
Clocks, watches, jewelry, and plate.....	6,404	10,095	4,840	2,736	4,637
Capital in merchandise and manufacturing.....	766,432	209,460	155,232	93,710	133,762
Household furniture.....	38,831	14,460	10,538	7,190	11,668
Farming utensils and mechanics' tools.....	19,468	13,898	17,840	3,450	7,658
Stocks, shares, and corporations.....	375	150,490	42,550	-----	200
Carriages and vehicles.....	35,368	28,970	29,360	7,230	19,719
Moneys and credits.....	96,642	44,015	117,123	34,435	52,997
Property not enumerated.....	935,644	44,439	86,548	249,658	7,851
	7,129,914	3,184,657	2,858,561	1,618,170	1,632,910
Railroads.....	778,141	920,524	910,638	1,496,102	1,368,295
Telegraph lines.....	18,816	17,013	14,829	27,962	17,961
	7,926,871	4,122,194	3,784,028	3,142,234	3,019,166

	Johnson.	Fremont.	Crook.	Converse.	Sheridan	Grand total.
Agricultural land and improvements....	\$351,718	\$227,841	\$398,410	\$248,937	\$390,201	\$5,866,174
Town lots and improvements.....	208,960	130,161	67,587	124,844	95,934	4,622,005
Neat cattle.....	884,592	872,022	1,372,927	880,621	334,283	7,014,661
Horses.....	220,335	259,258	314,828	145,990	191,242	2,387,369
Mules and asses.....	10,880	14,875	10,100	11,060	8,445	110,790
Sheep.....	6,194	122,478	4,813	5,230	8,956	794,557
Swine.....	2,655	1,594	1,670	530	3,800	12,919
Musical instruments.....	2,172	2,247	2,260	1,849	2,438	44,751
Clocks, watches, jewelry, and plate.....	4,847	1,991	765	2,777	2,671	41,763
Capital in merchandise and manufactur- ing.....	96,905	76,610	57,265	101,106	53,280	1,743,762
Household furniture.....	11,562	2,755	2,602	1,565	1,865	103,036
Farming utensils and mechanics' tools..	10,879	11,712	13,852	4,640	13,500	116,797
Stocks, shares, and corporations.....	31,343	2,155	-----	-----	27,404	254,517
Carriages and vehicles.....	19,054	27,110	14,535	4,640	16,015	208,726
Moneys and credits.....	50,225	44,752	4,925	2,550	57,020	504,684
Property not enumerated.....	51,327	22,177	11,957	10,345	21,702	1,441,648
	1,963,648	1,819,738	2,278,496	1,553,309	1,228,756	25,268,159
Railroads.....	-----	-----	-----	588,897	-----	6,062,597
Telegraph lines.....	-----	-----	-----	4,158	-----	100,739
	1,963,648	1,819,738	2,278,496	2,146,364	1,228,756	31,431,495

APPROPRIATIONS.

Table showing the appropriations made by the tenth biennial legislative assembly of Wyoming for the years 1888 and 1889, each amount being for two full fiscal years.

Board of equalization of stock, relief.....	\$927.95
Contingent expenses tenth legislative assembly	1,835.00
Council and house journals.....	350.00
Special auditing committee.....	200.00
Fireman and janitor's salary.....	390.00
Joint committee school laws.....	109.00
Equalization of stock.....	2,500.00
Care and transportation of ordnance.....	110.00
Special commissions Territorial treasurer.....	909.85
Sickness and funeral expenses of Hon. Nat. Huntington.....	351.05
Special appropriations for university.....	9,000.00
Reports of Territorial officers.....	750.00
Immigration expenses.....	2,500.00
Fish hatch-house.....	2,000.00
Assistant engineer.....	2,000.00
Engineer's contingent.....	3,000.00
Engineer's salary.....	5,000.00
Stenographer's salary.....	3,600.00
Stenographer's mileage.....	2,000.00
Auditing committee.....	600.00
Governor's contingent.....	2,400.00
Secretary's contingent.....	2,000.00
Attorney-general's contingent.....	600.00
Auditor's contingent.....	800.00
Treasurer's contingent.....	800.00
Librarian's salary.....	1,600.00
Fish commission salary.....	700.00
Fish contingent.....	4,500.00
Veterinarian's salary.....	5,000.00
Veterinarian's contingent.....	5,000.00
Attorney-general's salary.....	2,400.00
Treasurer's salary.....	800.00
Treasurer's commissions.....	2,500.00
Auditor's salary.....	2,400.00
Geologist's salary.....	3,600.00
Geologist's contingent.....	2,500.00
Coal inspector's salary.....	5,000.00
Coal inspector's contingent.....	2,500.00
Librarian's contingent.....	3,400.00
Library insurance.....	950.00
Library purchase.....	1,000.00
Inspectors of weights and measures, salary.....	200.00
Election returns.....	200.00
Juvenile delinquents.....	6,000.00
Penitentiary commission.....	2,500.00
Judges.....	3,000.00
Coal mining board.....	400.00
Fair premiums.....	5,000.00
Territorial building insurance.....	2,000.00
Relief of L. R. Meyer.....	15.00
Relief of John S. Russell.....	16.50
Relief of P. J. Quealy.....	215.04
Relief of Robert Smith.....	72.00
Veterinarian's report.....	50.00
Keep and transport prisoners.....	23,500.00
Penitentiary commission (1886 deficiency).....	300.00
Total appropriations Wyoming for two years	132,051.39

DISTANCES.

Official distances from Cheyenne, Wyo., to the following places (taken from table prepared by authority of the Secretary of War).

Places.	Distance.	Places.	Distance.
	<i>Miles.</i>		<i>Miles.</i>
Boston, Mass	2,151	Jacksonville, Fla	1,901
Baker City, Oregon	946	Kansas City, Mo.	716
Blackfoot, Idaho	595	Laramie, Fort, Wyo	88
Boulder, Colo	92	Laramie City, Wyo	57
Carter, Wyo	388	Lincoln, Nebr.	455
Chicago, Ill	1,006	Little Rock, Ark	1,186
Cincinnati, Ohio	1,233	Los Angeles, Cal.	1,552
Cleveland, Ohio	1,350	Louisville, Ky	1,194
Custer, Fort, Mont.	449	McKinney, Fort, Wyo	332
D. A. Russell, Fort, Wyo ..	3	Milwaukee, Wis	1,026
Davenport, Iowa	836	Minneapolis, Minn.	880
Deming, N. Mex	868	Montreal, Canada	1,843
Denison, Tex	1,038	New York City, N. Y.	1,918
Denver, Colo	106	Ogden, Utah	515
Des Moines, Iowa	660	Omaha, Nebr	516
Detroit, Mich	1,278	Philadelphia, Pa	1,827
Dubuque, Iowa	853	Portland, Oregon	1,303
Evanston, Wyo	439	Providence, R. I	2,011
Fetterman, Fort, Wyo	189	Rawlins, Wyo	193
Fort Worth, Tex	1,169	Rochester, N. Y.	1,582
Fred Steele, Fort, Wyo	178	St. Louis, Mo	929
Fremont, Nebr	470	Salt Lake City, Utah	552
Galveston, Tex	1,432	San Diego, Cal	1,649
Granger, Wyo	359	San Francisco, Cal	1,348
Green River	329	Sante Fé, N. Mex	588
Hartford, Conn	1,939	Sidney, Nebr	102
Helena, Mont	922	Washakie, Fort, Wyo	340
Indianapolis, Ind	1,122	Washington, D. C.	1,819
Jackson, Miss	1,414		

ALTITUDES.

CITIES, TOWNS, CAMPS, AND FORTS.

Names.	Altitude.	Names.	Altitude.
	<i>Feet.</i>		<i>Feet.</i>
Archer	6,035	Fort Aspenhut, abandoned	7,630
Aspen	7,809	Fort Bridger	6,753
Almy	6,820	Fort Fetterman (Platte bottom)	4,973
Atlantic City	7,666	Fort Halleck, abandoned	7,800
Barrel Springs	6,854	Fort Laramie	4,519
Baxter	6,300	Fort Phil Kearney abandoned	6,000
Bitter Creek	6,675	Fort Piney, abandoned	7,580
Black Butte	6,548	Fort Russell	6,455
Boleter	4,325	Fort Sanders, abandoned	7,166
Bridger	6,758	Fort Stambaugh, abandoned	7,684
Bryan	6,323	Fort Steele	6,841
Buford	7,808	Gardiner's River Spring (Yellow-stone Park)	6,100 to 6,500
Camp Brown (old Fort Washakie)	5,447	Geyser Basin, Lower	7,250
Camp Brown	5,498	Geyser Basin, Upper	7,400
Camp Stambaugh	7,767	Granite Cañon	7,327
Camp Walbach	6,449	Granger	6,252
Carbon	6,758	Green River	6,124
Carter	6,530	Greenville	6,560
Cheyenne	6,075	Hallville	6,590
Cheyenne Signal Bureau	6,058	Hampton	6,500
Church Buttes	6,298	Harney	7,882
Como	6,691	Hartville	4,700
Cooper's Lake	7,061	Hazard	6,357
Creston	7,026	Hillsdale	5,626
Dana	6,878	Howell	7,090
Deer Creek Agency, abandoned	5,000	Independence Rock	6,187
Devil's Gate	6,028	Jackson's Hole	6,000
Egbert	5,307	Laramie City	7,143
Encampment Meadows	8,171	Latham	6,900
Evanston	6,870	Lander	
Fairbank	4,620	Lawrence	6,260
Fillmore	6,885		

CITIES, TOWNS, CAMPS, AND FORTS—Continued.

Names.	Altitude.	Names.	Altitude.
	<i>Feet.</i>		<i>Feet.</i>
Leroy.....	7,100	Rock Creek.....	6,702
Lookout.....	7,184	Sand Creek.....	
Marston.....	6,245	St. Mary's.....	6,265
Medicine Bow.....	6,560	Salt Wells.....	6,753
Miller.....	5,908	Separation.....	6,897
Millis.....	6,790	Sherman.....	8,269
Miser.....	6,824	Simpson.....	6,904
Mud Volcanoes (Yellowstone Park)...	7,712	South Pass.....	7,857
Otto.....	6,754	Sulphur Springs (Yellowstone Park)...	7,088
Pacific Springs.....	7,144	Sun Dance.....	
Percy.....	6,955	Sweetwater Bridge.....	7,000
Piedmont.....	6,500	Table Rock.....	6,881
Pierre's Hole.....	6,515	Three Crossings.....	6,134
Pine Bluff.....	6,400	Walbach Springs.....	6,297
Point of Rocks.....	5,061	Wolcott's.....	6,800
Rawlins.....	6,730	Washakie.....	6,691
Red Buttes.....	7,360	Wilcox.....	7,033
Red Desert.....	6,703	Wyoming City.....	7,086

MOUNTAINS.

Name.	Mountain range.	Altitude.
		<i>Feet.</i>
Big Horn.....		8,000 to 12,000
Black Butte.....		8,176
Bradley's Peak.....	Seminole.....	9,500
Chimney Peak.....	Laramie.....	8,168
Chimney Rock.....	Wind River.....	11,853
Deer Mountain.....	Park.....	8,377
Delham Peak.....	do.....	11,524
Mount Doane.....	Yellowstone.....	10,118
Elk Mountain.....	Medicine Bow.....	11,511
Flat Mountain.....		9,704
Fremont's Peak.....	Wind River.....	13,570
Grand Encampment.....	Park.....	11,003
Mount Hayden.....	Téton.....	13,858
Mount Haystack.....		7,689
Inyan Cara.....	Black Hills.....	6,700
Iron Mountain.....	Laramie.....	6,908
Laramie Peak.....	do.....	11,000
Laramie Range.....		7,000 to 9,000
Medicine Peak.....	Park.....	12,231
Medicine Bow.....		8,000 to 12,000
Mount Moran.....	Téton.....	12,800
Muddy Mountain.....	Park.....	8,012
Park range, in Wyoming.....		11,500
Phlox Mountain.....	Owl Creek.....	9,136
Pine Bluff.....		8,878
Quaking Aspen.....		8,688
Quien Hornet.....	Uintah.....	9,300
Rawhide Peak.....		6,370
Red Mountain.....		9,806
River Butte.....		7,872
Rock Mountain.....		6,885
Sailor Mountain.....		10,046
St. Mary's Peak.....		7,722
Sander's Peak.....		9,077
Seminole Mountains (highest).....		10,500
Sheep Mountain.....	Park.....	9,758
Sheep Butte.....	Medicine Bow.....	9,722
Mount Sheridan.....		10,420
Mount Steele.....	Medicine Bow.....	7,771
Table Rock.....		7,551
Washakie.....	Uintah Range.....	7,984
Washakie Needles.....		12,253
Mount Washburn.....		10,388
Young's Peak.....	Seminole.....	9,000

RIVERS.

Names.	Altitude.	Names.	Altitude.
	<i>Feet.</i>		<i>Feet.</i>
Big Horn:		Yellowstone:	
At its source.....	7,527	Yellowstone Lake.....	7,788
Mouth Popo Agie.....	5,347	Top of Upper Falls (height of falls 140 feet).....	7,693
Leaves Big Horn Range.....	3,534	Top of Lower Falls (height of falls 397 feet).....	7,485
Green River:		Mouth of Tower Creek.....	6,207
At Green River City.....	6,130	Mouth of Gardner's River.....	5,360
North Platte:		Powder River:	
At Fort Steele.....	6,800	At Old Fort Reno.....	4,340
Fort Laramie.....	4,250	Clear Fork, Powder River.....	4,560
Twenty-five miles of Fort Laramie..	3,985	Tongue River, average.....	3,500
Snake River:		Belle Fourche.....	3,736
Head.....	7,986	Chug Water, at mouth.....	4,500
Shoshone Lake.....	7,870		
Lewis' Lake.....	7,828		
Jackson's Lake.....	6,806		

HYPSONOMETRIC AREAS.

The following table contains the hypsometric areas or elevations of land in Wyoming Territory:

	Square miles.
Area between—	
3,000 and 4,000 feet.....	3,000
4,000 and 5,000 feet.....	19,000
5,000 and 6,000 feet.....	20,000
6,000 and 7,000 feet.....	24,000
7,000 and 8,000 feet.....	17,000
8,000 and 9,000 feet.....	7,200
9,000 and 10,000 feet.....	4,300
10,000 and 11,000 feet.....	2,300
11,000 and 12,000 feet.....	900
12,000 and 13,000 feet.....	100
Total.....	97,800

WEATHER STATISTICS.

Rain-fall, mean temperature, direction of prevailing winds, and humidity at Cheyenne, Wyo., from 1871 to 1888.

RAIN-FALL.

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total year.
	<i>Inch.</i>	<i>Inch.</i>	<i>Inch.</i>	<i>Inch.</i>	<i>Inch.</i>	<i>Inch.</i>	<i>Inch.</i>	<i>Inch.</i>	<i>Inch.</i>	<i>Inch.</i>	<i>Inch.</i>	<i>Inch.</i>	<i>Inch.</i>
1871.....	0.28	0.07	0.11	0.95	2.04	2.25	1.27	0.36	0.74	0.24	0.66	0.16	9.13
1872.....	0.02	0.27	0.38	1.61	1.99	1.84	3.90	2.05	1.03	0.33	0.03	0.03	13.48
1873.....	0.03	0.02	0.38	0.92	2.41	1.77	1.10	2.07	0.36	0.70	0.17	0.80	10.73
1874.....	0.11	0.11	0.74	0.61	1.50	1.34	1.87	0.44	0.93	1.86	0.04	0.16	9.71
1875.....	0.42	0.06	0.23	0.50	1.20	0.29	4.47	2.12	1.34	0.60	0.84	0.03	12.10
1876.....	0.02	0.06	0.54	0.23	2.50	0.10	0.79	0.26	0.00	0.00	0.32	0.21	5.13
1877.....	0.20	0.14	0.98	1.11	2.24	1.27	0.43	0.83	2.02	1.99	0.17	0.33	11.71
1878.....	0.08	0.13	1.16	0.19	4.46	1.71	1.43	2.50	0.75	0.04	0.00	0.19	12.64
1879.....	0.32	0.20	0.44	1.66	1.30	0.07	1.04	1.26	0.00	0.65	0.23	0.17	7.34
1880.....	0.20	0.09	0.06	0.17	0.44	1.06	1.88	2.23	1.05	0.76	0.36	0.08	8.38
1881.....	0.36	0.22	0.32	2.32	1.14	1.19	1.40	1.97	1.75	0.88	0.29	0.01	11.85
1882.....	0.14	0.05	0.06	0.46	2.73	1.85	2.30	0.23	0.35	0.31	0.06	0.10	8.64
1883.....	0.88	0.25	0.85	2.76	3.08	3.67	1.45	2.18	0.90	1.66	0.16	0.80	19.24
1884.....	0.76	0.26	1.59	1.33	4.83	1.50	0.60	2.07	1.25	0.50	0.18	0.67	15.54
1885.....	0.16	1.31	0.51	3.76	1.33	2.75	1.91	2.14	0.69	0.28	1.11	0.16	16.11
1886.....	0.52	0.84	1.36	1.14	0.32	1.52	0.71	1.61	1.05	0.37	.....	.....	.....
1887.....	.....	.....	0.06	0.80	0.24	0.29	0.84	0.36	0.78	0.25	0.16	0.11	.....
1888.....	0.29	0.72	2.04	0.94	3.74	0.56	2.31	1.15	1.66	0.30	0.57	0.21	14.49
Mean.....	0.28	0.34	0.66	1.19	2.12	1.39	1.65	1.43	0.92	0.65	0.31	0.25	11.63

TEMPERATURE.

	Maxi- mum.	Date.	Mini- mum.	Date.	Mean of year.	Prevail- ing wind.	Humid- ity.
	°		°		°		°
1872			-14	Dec. 21	43.3	W.	51.8
1873	94	July 5	-17	Jan. 27	44.7	W.	48.3
1874	98	July 4	-24	Feb. 24	45.5	W.	48.1
1875	93	June 21	-38	Jan. 9	42.7	NW.	59.7
1876	96	July 6	-14	Dec. 24	44.3	NW.	49.7
1877	96	July 5	-14	Jan. 22	44.2	NW.	55.2
1878	92	July 14	-12	Dec. 25	44.2	NW.	57.4
1879	95	July 12	-24	Dec. 24	46.3	W.	45.4
1880	97	July 19	-24	Dec. 28	42.9	NW.	44.5
1881	100.5	July 14	-12	Feb. 14	45.8	NW.	52.5
1882	96	Aug. 1	-15.5	Nov. 12	43.9	NW.	47.9
1883	94.2	July 1	-31.3	Jan. 20	42.4	NW.	52.6
1884	93.4	June 27	-28.2	Feb. 12	42.6	NW.	56.0
1885	89.9	July 15	-18.6	Jan. 16	44.0	NW.	63.6
1888	97.2	July 11	-27.2	Jan. 14	44.5	NW.	50.4

UNITED STATES PUBLIC-LAND LAWS.

The following information concerning the public-land laws will be useful to those desiring knowledge on the subject:

All lands which are for sale or other disposal by the Government under general laws are known as public lands, and are divided into land districts, in each of which is a land office presided over by two officers, known respectively as the register and receiver.

There are three of these land districts in this Territory.

The register and receiver act as agents for the Government, and patents will be issued for all lands sold or otherwise disposed of by them, if approved by the Commissioner of the General Land Office, Washington, D. C.

Agricultural lands are disposed of to actual settlers only under the homestead, pre-emption, and timber-culture laws.

Desert lands are such as will not produce crops without irrigation by artificial means.

Within the limits of railroad grants only the even-numbered sections are disposed of by the Government, and these are known as *double-minimum* land, and when entered under the pre-emption law the price is \$2.50 per acre.

Outside the railroad limits the land is known as *minimum* land, and is sold at \$1.25 per acre.

Citizenship is required, or a declaration to become a citizen of the United States, before any public lands can be taken in this Territory.

Only one claim can be taken by the same person under each of the public-land laws of the United States.

THE HOMESTEAD LAW.

Every citizen of the United States who is over twenty-one years of age, or the head of a family, can take 160 acres of the public lands (agricultural) by establishing a residence thereon and cultivating the same in good faith as a home for five years from the date of settlement; or if, after six months' residence and cultivation, such persons so desire, they may commute their homestead claim by paying the Government price therefor; or, if a soldier or sailor in the Army or Navy of the United States during the recent rebellion, and honorably discharged, the time of his service will be deducted from the five years' residence required. But in such cases a residence of one year on the land becomes necessary before patent will be issued.

THE PRE-EMPTION LAW.

Residence, cultivation, and sufficient improvements to show the good faith of the claimant are required.

One hundred and sixty acres can be taken of agricultural land; qualification as to age and citizenship is the same as under the homestead law. The claimant must not be the owner of 320 acres of land, nor leave land of his own in this Territory (town lot excepted) in order to settle upon a pre-emption claim, nor take such claim for the purpose of speculation instead of residence and cultivation.

The good faith of every claimant must be clearly established.

He may change his pre-emption filing to a homestead by making proper application to the land office. Not less than six months' residence and improvement are required by law before payment can be made.

On *offered* lands the declaratory statement must be filed within thirty days, and the final proof made within one year from the date of settlement. On *unoffered* lands the declaratory statement must be filed within three months, and the final proof made within thirty-three months from the date of settlement.

The price for minimum land is \$1.25, and for double-minimum land \$2.50 per acre.

TIMBER-CULTURE LAW.

Qualifications of claimant the same as to age, citizenship, and good faith.

Amount of land, 160 acres. Land must be devoid of timber. During the first year at least 5 acres must be plowed. The second year said 5 acres must be actually cultivated to crop, and a second 5 acres plowed. The third year the first 5 acres must be planted in timber, seeds, or cuttings, and the second 5 acres actually cultivated to crop. The fourth year the second 5 acres must be planted in timber, seeds, or cuttings, making at the end of the fourth year 10 acres thus planted.

If the claim is less than 160 acres the area plowed and planted will be in the same proportion as for 160 acres; that is, one-sixteenth of the claim. Not less than 2,700 trees must be planted on each acre, and there must be at least 675 living trees on each acre to entitle the claimant to patent at the expiration of eight years from date of entry.

Residence in the Territory is not required for timber-culture.

COAL-LAND LAWS.

Same qualifications as to age and citizenship.

One person can purchase 160 acres of coal land. If within 15 miles of a completed railroad the price is \$20 per acre; if outside that distance, \$10. An association of persons may purchase 320 acres, or an association of not less than four persons, who make an expenditure of \$5,000 upon their claim, may purchase 640 acres, including their improvements.

Coal-land declaratory statements must be filed within sixty days, and proof and payment made within one year from date of possession.

MINING LAWS.

The mining laws of Wyoming are similar to those of other mining States and Territories.

DESERT-LAND LAW.

Any person, a citizen or one who has declared his intentions, twenty-one years of age, can file on 640 acres in compact form, not longer than $1\frac{1}{4}$ miles, by paying 25 cents an acre at filing, proving up within three years (and paying \$1 more) by conveying water on it, cultivating a hay or other crop, and reclaiming it from its desert character, and is entitled, upon proof, to obtain a patent for it.

A declaration is made by the party, with two witnesses, of desert and non-mineral character, sworn to before land office or clerk of court of record. Can be filed on unsurveyed land. They are not assignable. No fees to officers. Final proof must show cultivation and reclamation. Copy of declaration of intention must accompany final proof; also record proof of water-right, if any.

If the three years' limitation has expired affidavits must be made with satisfactory reasons for delay before final proof. If the time passes by and the claim is contested, it is lost.

Residence in the Territory is not required in desert entries, nor is applicant obliged to appear at the land office when filing or at proof, but witnesses must be present.

TIME OF HOLDING COURTS.

SUPREME COURT.

Chief justice, Willis Van Devanter; associate justices, Micah C. Sanfley, Samuel T. Corn; clerk, James R. Whitehead. General term held at Cheyenne on the third Monday in January of each year.

FIRST JUDICIAL DISTRICT.

Composed of Laramie, Converse, and Crook Counties, Judge Willis Van Devanter presiding; residence, Cheyenne.

General terms held at Cheyenne for Laramie County on the fourth Monday in May and on the second Monday in November in each year; clerk, Frank H. Clark, Cheyenne.

At Sundance, for Crook County, one term, on the first Tuesday in August of each year; John S. Harper, deputy clerk, Sundance.

At Douglas, for Converse County, at such times as the judge and county commissioners may designate; Nathan E. Burns, deputy clerk, Douglas.

SECOND JUDICIAL DISTRICT.

Composed of Albany, Johnson, and Sheridan Counties, Judge Micah C. Sanfley presiding; residence, Laramie City.

General terms held at Laramie City, for Albany County, on the second Monday in March and on the second Monday in October in each year; clerk, Charles T. Gale, Laramie City.

At Buffalo, for Johnson County, on the fourth Monday in June and on the second Monday in December in each year; ——— Hill, deputy clerk, Buffalo. At Sheridan, for Sheridan County, at such times as the judge and county commissioner may designate; B. F. Perkins, deputy clerk, Sheridan.

THIRD JUDICIAL DISTRICT.

Composed of Uinta, Sweetwater, Carbon, and Fremont Counties, Judge Samuel T. Corn, presiding; residence, Evanston.

General terms at Evanston, for Uinta County, on the first Monday in April and on the first Monday in September in each year; clerk, John Stone, Evanston.

At Green River City, for Sweetwater County, on the fourth Monday in April and on the fourth Monday in September in each year; Alfred Young, deputy clerk, Green River City.

At Rawlins, for Carbon County, on the second Monday in May and on the second Monday in October in each year; ——— Chrisman, deputy clerk, Rawlins.

At Lander, for Fremont County, on the first Monday in July of each year; Benjamin F. Sheldon, deputy clerk, Lander.

OFFICERS OF THE TERRITORY.

FEDERAL.

Position.	Name.	Location.
Governor.....	Francis E. Warren	Cheyenne.
Secretary of Territory	John W. Meldrum	Do.
Chief-Justice	Willis Van Devanter...	Do.
Associate Justice.....	M. C. Sanfley	Laramie.
Associate Justice	Samuel T. Corn.....	Evanston.
United States Attorney	A. C. Campbell.....	Cheyenne.
United States Marshal	Thomas J. Carr.....	Do.
Surveyor-General.....	W. R. Richards.....	Do.
United States Revenue Collector	James F. Benedict.....	Denver.
United States Deputy Revenue Collector.....	F. A. Stitzer	Cheyenne.
Registers of Land Offices.....	E. P. Champlin.....	Do.
	A. L. New.....	Evanston.
	H. C. Mann	Buffalo.
Receivers of Public Moneys.....	LeRoy Grant	Cheyenne.
	W. T. Shaffer	Evanston.
	John J. Orr.....	Buffalo.

TERRITORIAL.

Position.	Name.	Location.
Delegate in Congress	Joseph M. Carey	Cheyenne.
Attorney-General	Hugo Donzelman	Do.
Auditor and ex-officio Insurance Commissioner	M. N. Grant	Laramie.
Treasurer	Luke Voorhees	Cheyenne.
Librarian and ex-officio Superintendent of Public In- struction	John D. Slaughter	Do.
Hydraulic Engineer	Elwood Mead	Do.
Penitentiary Commissioners	Colin Hunter	Do.
	Timothy Dyer	Do.
	Timothy Kinney	Rock Springs.
	Louis Miller	Laramie.
Fish Commissioner	Robert C. Morris	Cheyenne.
Stenographer	C. G. Epperson	Evanston.
Inspector of Coal Mines	Louis D. Ricketts	Cheyenne.
Geologist and Mining Engineer	A. A. Holcombe	Do.
Veterinarian	Lester C. Baker	Do.
Private Secretary to Governor	J. H. Finfrock	Laramie.
Board of Trustees of the University of Wyoming	Edward Iverson	Do.
	W. H. Holliday	Do.
	A. S. Peabody	Do.
	J. Y. Cowhick	Cheyenne.
	G. W. Seevers	Do.
	John C. Davis	Rawlins.
Board of Trustees of the Institute for the Support and Education of the Deaf, Dumb, and Blind	George C. Rafter	Cheyenne.
	E. W. Whitcomb	Do.
	C. A. Campbell	Do.
Board of Commissioners of the Insane Asylum	A. C. Beckwith	Evanston.
	William Crawford	Do.
	Charles Stone	Do.
Commissioners of Pharmacy	A. Richard Troxell	Cheyenne.
	Fred P. Shannon	Carbon.
	William C. Wilson	Laramie.
	R. F. Glover	Cheyenne.
	C. H. Grinnell	Sheridan.
	Dan C. Bacon	Laramie.
	Frank Earnest	Rawlins.
Live Stock Commissioners	Abner Luman	Rock Springs.
	Harvey Booth	Evanston.
	R. H. Hall	Lyons.
	H. A. Hoffman	Theresa.
	Fred C. S. Hesse	Cra.
	J. C. Spencer	Custer City, Dak.
	L. R. Bresnahan	Cheyenne.
	T. A. Kent	Do.
Capitol Building Commission	Arthur Poole	Do.
	J. C. Baird	Do.
	Andrew Gilchrist	Do.
	I. C. Miller	Rawlins.
Penitentiary Building Commission	J. E. Osborne	Do.
	J. P. Wallace	Do.
	N. Baldwin	Lander.
Poor Asylum Building Commission	J. F. Ludin	Do.
	E. Amoretti	Do.

Members elect to the eleventh legislative assembly of Wyoming ; convenes January 14, 1890.

Name.	District.	Residence.	Name.	District.	Residence.
<i>Council.</i>			<i>House of Representatives—Cont'd.</i>		
Colin Hunter	First	Cheyenne.	Frank H. Clark *	First	Cheyenne.
Alexander H. Reel	do	Do.	Stephen W. Downey	Second	Laramie.
Charles A. Campbell	do	Do.	Jerome S. Atherly	do	Sherman.
Augustus Trabing	Second	Laramie.	William Taylor	do	Rock Creek.
John McGill	do	Rock Creek.	Jabez B. Simpson	do	Laramie.
R. M. Galbraith	Third	Rawlins.	David L. Rusk	Third	Rawlins.
G. W. Burdick	do	Saratoga.	W. L. Evans	do	Do.
Tim. Kinney	Fifth	Rock Springs.	J. P. Rankin	do	Do.
Andrew B. Liggett	Sixth	Evanston.	Dave G. Thomas	Fifth	Rock Springs.
M. Murphy	Seventh	Lander.	James H. Brown	do	Do.
George T. Beck	Eighth	Buffalo.	Alef. G. Rex	Sixth	Evanston.
Joseph L. Stotts	Ninth	Sundance.	Thomas Snedden	do	Do.
<i>House of Representatives.</i>			W. A. Carter	do	Fort Bridger.
William R. Schnitger	First	Cheyenne.	W. D. Pickett	Seventh	Meeteetse.
Fredric S. Hebard	do	Do.	Charles H. Burrett	Eighth	Buffalo.
Alexander Bowie	do	Chug Water.	John McCormick	Ninth	Sheridan.
William E. Guthrie	do	Cheyenne.	O. P. Kellogg	Tenth	Sundance.
Frank A. Roedell	do	Do.	Mortimer Jesurun	Eleventh	Douglas.
			Edward C. David	Twelfth	Glenrock.

* Resigned, special election called for November 5, 1889, to fill his place.

List of county officers of Wyoming for the term of two years from January, 1889.

ALBANY COUNTY.

Position.	Name.	County seat.
Sheriff	Charles Yund	Laramie.
County clerk	C. W. Spalding	Do.
Probate judge and county treasurer	Otto Gramm	Do.
County and prosecuting attorney	H. V. S. Groesbeck	Do.
Coroner	J. H. Hayford	Do.
Assessor	H. R. Ingham	Do.
Superintendent of schools	H. L. Stevens	Do.
Surveyor	W. O. Owen	Do.

CARBON COUNTY.

Sheriff	F. W. Hadsell	Rawlins.
County clerk	B. S. Ross	Do.
Probate judge and county treasurer	F. Chatterton	Do.
County and prosecuting attorney	D. H. Craig	Do.
Coroner	J. A. Bennett	Do.
Assessor	W. G. Reader	Do.
Superintendent of schools	G. W. Barr	Do.
Surveyor	J. M. Sterrett	Do.

CROOK COUNTY.

Sheriff	J. W. Rogers	Sundance.
County clerk	A. C. Settle	Do.
Probate judge and county treasurer	F. M. Pettigrew	Do.
County and prosecuting attorney	H. A. Alden	Do.
Coroner	N. H. Baker	Do.
Assessor	W. J. McCrea	Do.
Superintendent of schools	Cora Hill	Do.
Surveyor	J. B. Boyden	Do.

List of county officers of Wyoming, etc.—Continued.

CONVERSE COUNTY.

Position.	Name.	County seat.
Sheriff	J. T. Williams	Douglas.
County clerk	C. M. Garver	Do.
Probate judge and county treasurer	C. E. Clay	Do.
County and prosecuting attorney	F. H. Harvey	Do.
Coroner	W. F. Longer	Do.
Assessor	Sam. Slaymaker	Do.
Superintendent of schools	Cornelia M. Lusk	Do.
Surveyor	A. T. Seymour	Do.

FREMONT COUNTY.

Sheriff	A. M. Sparhawk	Lander.
County clerk	J. A. McAvoy	Do.
Probate judge and county treasurer	M. N. Baldwin	Do.
County and prosecuting attorney	Charley Allen	Do.
Coroner	W. A. Feiser	Do.
Assessor	P. P. Dickinson	Do.
Superintendent of schools	Mary A. Mason	Do.
Surveyor	F. S. Wood	Do.

JOHNSON COUNTY.

Sheriff	W. G. Angus	Buffalo.
County clerk	W. A. Evans	Do.
Probate judge and county treasurer	G. W. Munkhes	Do.
County and prosecuting attorney	H. S. Elliott	Do.
Coroner	F. H. Eggleston	Do.
Assessor	J. T. Wall	Do.
Superintendent of schools	N. L. Andrews	Do.
Surveyor	J. E. Shannon	Do.

LARAMIE COUNTY.

Sheriff	John A. Martin	Cheyenne.
County clerk	I. L. Fredendall	Do.
Probate judge and county treasurer	Isaac Bergman	Do.
County and prosecuting attorney	W. R. Stoll	Do.
Coroner	J. T. Chaffin	Do.
Assessor	T. J. Fisher	Do.
Superintendent of schools	Josephine W. Breckons	Do.
Surveyor	F. H. Jones	Do.

SWEETWATER COUNTY.

Sheriff	Thomas Whitmore	Green River.
County clerk	F. I. Gunnell	Do.
Probate judge and county treasurer	Alfred Young	Do.
County and prosecuting attorney	H. B. Conway	Do.
Coroner	J. T. Treasure	Do.
Assessor	W. W. Patterson	Do.
Superintendent of schools	Mrs. S. Sheddon	Do.
Surveyor .....	.....	.....

SHERIDAN COUNTY.

Sheriff	J. M. Enochs	Sheridan.
County clerk	Frank McCoy	Do.
Probate judge and county treasurer	J. P. Robinson	Do.
County and prosecuting attorney	W. J. Stover	Do.
Coroner	W. F. Green	Do.
Assessor	J. Morrow	Do.
Superintendent of schools	Minnie E. Paxton	Do.
Surveyor	D. F. Hinkey	Do.

List of county officers of Wyoming, etc.—Continued.

UINTA COUNTY.

Position.	Name.	County seat.
Sheriff.....	J. H. Ward.....	Evanston.
County clerk.....	J. R. Arnold.....	Do.
Probate judge and county treasurer.....	F. H. Harrison.....	Do.
County and prosecuting attorney.....	Jesse Knight.....	Do.
Coroner.....	Henry Code.....	Do.
Assessor.....	William Beveridge.....	Do.
Superintendent of schools.....	E. W. Hinchman.....	Do.
Surveyor.....	G. A. Johnson.....	Do.

Notaries public in Wyoming.

[Appointed for two years.]

ALBANY COUNTY.

Name.	Post-office address.	Term expires.
Arnold, C. P.....	Laramie.....	Mar. 6, 1890
Bauman, A. M.....	do.....	Aug. 5, 1891
Blake, J. W.....	do.....	Apr. 10, 1890
Butler, H. R.....	do.....	Apr. 12, 1891
Corthell, Nellis E.....	do.....	Nov. 14, 1889
Fishback, W. H.....	do.....	Oct. 24, 1889
Fox, George W.....	do.....	Jan. 4, 1891
George, Charles J.....	do.....	Mar. 23, 1890
Groesbeck, Herman.....	do.....	Aug. 14, 1890
Hansen, A. C.....	do.....	Jan. 2, 1891
Hills, W. J.....	do.....	Nov. 11, 1889
Hiskey, E. D.....	do.....	June 29, 1891
Hiskey, W. W.....	do.....	Dec. 19, 1890
Jahren, M. C.....	do.....	Jan. 19, 1890
Jennings, Mark.....	do.....	Oct. 24, 1889
Jewell, George M.....	do.....	Oct. 7, 1891
Neil, Henry B.....	Tie Siding.....	Mar. 12, 1890
Ott, F. W.....	Laramie.....	Jan. 19, 1890
Pease, L. D.....	do.....	Jan. 16, 1890
Symons, John H.....	do.....	June 22, 1891
Taylor, William.....	Rock Creek.....	Feb. 23, 1891
Thomas, William D.....	Laramie.....	June 25, 1891
Vine, James.....	do.....	Nov. 18, 1889
Wilkinson, C. W.....	do.....	Jan. 18, 1891

CARBON COUNTY.

Blydenburgh, Charles E.....	Rawlins.....	Sept. 21, 1891
Bothwell, A. J.....	Sweetwater.....	Nov. 25, 1889
Buchanan, Milford L.....	Dixon.....	Sept. 30, 1891
Calvert, J. M.....	Baggs.....	Feb. 9, 1891
Caldwell, George R.....	Saratoga.....	
Craig, D. H.....	Rawlins.....	Sept. 12, 1890
Clark, William.....	Searight.....	Apr. 20, 1890
Crawford, J. F.....	Saratoga.....	Aug. 6, 1890
Dodge, C. E.....	Rawlins.....	Feb. 1, 1891
Emery, B. F.....	Casper.....	Aug. 6, 1890
Ervay, J. E.....	Oil City.....	Apr. 19, 1890
Fetz, Henry B.....	Sweetwater.....	Aug. 22, 1891
Finley, John M.....	Dixon.....	May 14, 1890
Friend, John C.....	Rawlins.....	Oct. 24, 1889
Heath, Alfred.....	Saratoga.....	Dec. 13, 1890
Henderson, H. B.....	Rawlins.....	Aug. 8, 1890
Hocker, Melville E.....	do.....	Apr. 29, 1891
Howard, Henry H.....	do.....	June 15, 1891
Huntington, G. M.....	do.....	May 28, 1890
Klinkenbeard, John L.....	Medicine Bow.....	May 7, 1891
Lane, Charles H.....	Carbon.....	Jan. 18, 1890
Jones, John S.....	Elk Mountain.....	Mar. 12, 1890
McCoy, M. W.....	Casper.....	Jan. 2, 1891
McNamard, P. T.....	Oil City.....	Apr. 19, 1890

Notaries public in Wyoming—Continued.

CARBON COUNTY—Continued.

Name.	Post-office address.	Term expires.
Merrell, Homer.....	Rawlins	July 22, 1891
Minta, Thomas O.....	Carbon	July 1, 1891
Smith, George C.....	Rawlins	Mar. 11, 1891
Stanley, Herbert.....	do	Oct. 13, 1890
Sterrett, James M.....	Saratoga.....	June 13, 1890
Rumsey, James M., jr.....	Rawlins	Jan. 4, 1891
Trobridge, William M.....	Dixon	Nov. 10, 1890
Wright, Carl C.....	Casper.....	Sept. 10, 1890

CONVERSE COUNTY.

Abbott, Mark M.....	Glenrock	Nov. 8, 1889
Adamsky, Simon	Lusk	May 28, 1890
Booth, G. Mouson.....	Glenrock	May 31, 1890
Butler, Alex. T.....	Douglas	June 1, 1890
Calkins, J. K.....	Lusk	Dec. 26, 1890
Callander, H. N.....	do	June 22, 1891
Camplin, M. B.....	Douglas	Aug. 6, 1890
Foster, J. W.....	do	May 28, 1890
Goddard, D. E.....	Lusk	Sept. 18, 1891
Harrison, F. B.....	Glenrock	Nov. 9, 1889
Harrison, Stanley.....	Tolland	June 15, 1890
Higby, Harry L.....	Manville	Feb. 23, 1891
Kinball, Emerson H.....	Glenrock	May 28, 1890
Lonabaugh, E. E.....	Lusk	May 28, 1890
Maurer, C. F.....	Douglas	May 28, 1890
Prescott, Daniel.....	Glenrock	May 28, 1890
Richardson, Sumner J.....	Lusk	Feb. 1, 1891
Seymour, A. T.....	Glenrock	May 28, 1890
Sheffer, John A.....	Manville.....	May 28, 1890
Wilson, Thomas G.....	do	May 28, 1890

CROOK COUNTY.

Adams, Milo A.....	Sundance.....	Sept. 7, 1890
Alden, H. A.....	do	Feb. 1, 1891
Baker, Daniel C.....	Fisher Post-office.....	June 5, 1890
Barrett, F. M.....	Sundance.....	May 11, 1891
Baird, W. M.....	do	Jan. 30, 1890
Davis, L. R.....	do	Jan. 2, 1891
Davis, B. F.....	Burlington	Aug. 3, 1891
Durrett, George M.....	Sundance.....	May 18, 1891
Fowler, B. F.....	do	Jan. 18, 1891
Frank, Meyer.....	do	Sept. 12, 1891
Hooper, Tom.....	do	Dec. 15, 1890
Howard, O. F.....	do	Jan. 19, 1890
Metz, W. S.....	do	Sept. 6, 1890
Mondell, Frank W.....	Custer, Dak.....	Dec. 31, 1890
Monroe, C. H.....	Sundance.....	June 13, 1891
Jackson, George S.....	Nigger Hill.....	Aug. 14, 1891
Pearson, John.....	Sundance.....	Oct. 6, 1890
Pettigrew, T. M.....	do	Nov. 10, 1889
Seabury, G. T.....	Inyan Kara.....	Dec. 17, 1890
Scott, Richard H.....	Sundance.....	Dec. 15, 1890

FREMONT COUNTY.

Allen, Charley.....	Lander	May 28, 1890
Bates, Charles E.....	do	Feb. 26, 1891
Brown, N. H.....	do	Feb. 8, 1890
DeBarthe, Joseph.....	do	Jan. 21, 1891
Hank, Elmer.....	Shoshone Agency.....	Oct. 1, 1891
Lawn, Edward.....	Atlantic City.....	Aug. 28, 1891
Norton, J. T.....	Lander	June 19, 1890
Parks, Samuel C., jr.....	do	Nov. 25, 1889
Patten, James I.....	do	May 24, 1890
Signor, Eli A.....	Rongis.....	Oct. 24, 1889
Sullival, J. W.....	Lander	Sept. 22, 1890
Woods, Frank S.....	Meeteetse.....	Nov. 18, 1889
Wright, Fred T.....	Lander	Aug 9, 1891

Notaries public in Wyoming—Continued.

JOHNSON COUNTY.

Name.	Post-office address.	Term expires.
Bennett, Alvin.....	Buffalo.....	Jan. 8, 1891
Collins, W. S.....	Bonanza.....	Apr. 18, 1891
Mann, H. R.....	Buffalo.....	Aug. 25, 1890
Martin, John T.....	do.....	Oct. 24, 1889
Meuardi, J. B.....	do.....	May 25, 1890
Reiman, Joseph.....	do.....	May 31, 1891
Richards, William R.....	Red Bank.....	Nov. 30, 1890
Sittig, E. J.....	Buffalo.....	June 7, 1890
Tisdale, John N.....	Powder River.....	Aug. 25, 1890

LARAMIE COUNTY.

Abry, Emile A.....	Cheyenne.....	June 9, 1890
Adams, Thomas B.....	do.....	July 18, 1891
Abbott, George E.....	do.....	Aug. 6, 1891
Baker, Valentine.....	do.....	Aug. 5, 1891
Beard, George L.....	do.....	June 4, 1891
Bond, Fred.....	do.....	Do.
Brown, Fanny R.....	do.....	May 16, 1890
Bruner, J. W.....	do.....	July 13, 1891
Chapin, John.....	do.....	June 19, 1890
Churchill, Edward J.....	do.....	April 30, 1890
Clark, Frank H.....	do.....	Feb. 6, 1891
Corson, Samuel.....	do.....	Jan. 8, 1891
Cudebec, George.....	Archer.....	July 20, 1891
Davidson, Bradford B.....	Iron Mountain.....	June 18, 1891
Evans, Elsworth E.....	Cheyenne.....	April 10, 1890
Donzelman, Hugo.....	do.....	
Fisher, T. J.....	do.....	Jan. 7, 1890
Fisher, J. W.....	do.....	Apr. 28, 1890
Force, William H.....	do.....	Feb. 5, 1891
Foss, Frank W.....	Chug Water.....	May 3, 1890
Freeborn, J. D.....	Cheyenne.....	
Glover, R. F.....	do.....	Apr. 6, 1890
Gordon, John H.....	Little Horse Creek.....	Dec. 6, 1889
Gill, J. D.....	Cheyenne.....	Jan. 23, 1891
Hauphoff, J. J.....	do.....	Aug. 7, 1890
Hebard, Frederic S.....	do.....	July 8, 1891
Jackson, Robert.....	Egbert.....	Apr. 20, 1890
Johnson, Marshall.....	Cheyenne.....	June 1, 1890
Jones, C. S.....	Pine Bluffs.....	Apr. 25, 1890
Kabis, L.....	Cheyenne.....	May 17, 1890
Kirk, Edward B.....	do.....	Mar. 21, 1890
Kuykendall, W. L.....	do.....	May 18, 1891
Larsh, Walter L.....	do.....	Aug. 8, 1890
Lowrey, Amiz G.....	Rawhido Buttes.....	June 27, 1891
Mann, Edgar W.....	Cheyenne.....	May 7, 1891
McCann, John K.....	Hartville.....	May 1, 1890
Morgan, G. F.....	Cheyenne.....	Sept. 10, 1891
Morris, Robert C.....	do.....	Oct. 15, 1891
McRae, D. A.....	do.....	Feb. 6, 1890
Norton, John T.....	do.....	Nov. 11, 1889
Offley, Robert S.....	Fort Russell.....	May 25, 1891
Peterson, F. M.....	Pine Bluffs.....	Apr. 23, 1890
Pratt, J. G.....	Cheyenne.....	Oct. 11, 1891
Ransom, Fred W.....	do.....	May 14, 1890
Repath, Richard H.....	do.....	April 9, 1891
Richards, W. A.....	Fort Laramie.....	Feb. 23, 1891
Schnitger, William R.....	do.....	Mar. 11, 1891
Sheldon, F. B.....	do.....	May 24, 1891
Stahle, Ed. F.....	do.....	June 5, 1891
Stanley, G. W.....	do.....	Feb. 6, 1891
Stanton, Frederick J.....	do.....	Mar. 23, 1891
Stewart, Charles W.....	do.....	Apr. 29, 1891
Stitzer, Frank A.....	do.....	Oct. 2, 1890
Stoll, W. R.....	do.....	May 16, 1890
Tuttle, S. B.....	do.....	Apr. 5, 1890
Wilkes, W. J.....	do.....	Jan. 19, 1890

Notaries public in Wyoming.

[Appointed for two years.]

SHERIDAN COUNTY.

Alger, H. C	Sheridan	May 26, 1890
Coffeen, H. A	do	Do.
Cotton, Thomas M	do	Do.
Helvey, John D	do	May 31, 1890
Robinson, jr., H. N	do	Feb. 1, 1891
Stover, W. J	do	May 26, 1890
Wolfe, J. T	Big Horn	Do.

SWEETWATER COUNTY.

Daus, L. L	Rock Springs	Aug. 6, 1890
Hereford, Robert L	Burnt Fork	Oct. 20, 1890
Kenball, Augustine	Rock Springs	Aug. 12, 1891

UINTA COUNTY.

Bartlett, Samuel J	Afton	Nov. 4, 1889
Call, Anson B	do	Apr. 25, 1891
Clark, Clarence D	Evanston	Feb. 9, 1891
Goodell, William	Cokeville	Mar. 24, 1890
Groshon, Maurice	Fort Bridger	May 17, 1890
Head, Hadley B	Evanston	Nov. 30, 1890
Hinton, William	do	Jan. 30, 1890
Knight, Jesse	do	Sept. 3, 1891
McKay, Hugh	Big Piney	Nov. 25, 1889
Post, William S	Ham's Fork	Aug. 5, 1891
Ryckman, James H	Evanston	May 11, 1891
White, Earle C	do	Sept. 17, 1890
White, Leroy H	do	Oct. 31, 1890

Water commissioners.

District.	Name.	Post-office.	Term expires.
No. 1	W. D. Pease	Cheyenne	April 12, 1891
No. 2	Charles Bellamy	Laramie	
No. 3	Frank O. Williams	Saratoga	June 10, 1891
No. 5*	John E. Shannon	Buffalo	Oct. 15, 1891
No. 6	Albert Weaver	Sundance	July 15, 1891
No. 7	W. H. Moss	Evanston	
No. 8	Samual Iiams	Lander	
No. 9	John Wilkes	Afton	July 26, 1891

* District No. 4 not yet organized.

Commissioners of deeds for Wyoming.

[Appointed for two years.]

States.	Name.	Post-office address.	Term expires.
California	Joseph P. Perkins	Santa Barbara	Jan. 17, 1890
Do	James E. Mills	Sacramento	Oct. 23, 1890
Do	James L. King	San Francisco	Jan. 2, 1891
Dakota	John R. Jones	Deadwood	Sept. 9, 1891
District of Columbia	John E. Beall	Washington	May 1, 1890
Do	Charles S. Bundy	do	Aug. 6, 1890
Illinois	Julian E. Buckbee	Chicago	Feb. 6, 1890
Do	Frank P. Crandon	do	Aug. 6, 1890
Do	Simon W. King	do	Jan. 2, 1891
Do	Philip A. Hoyne	do	July 1, 1891

Commissioners of deeds for Wyoming—Continued.

States.	Name.	Post-office address.	Term expires.
Louisiana	M. C. Soniah	New Orleans	Mar. 6, 1890
Kansas	J. W. Waggener	Atchison	Oct. 17, 1890
Massachusetts	Frank D. Butrick	Boston	May 22, 1890
Do	Edward J. Jones	do	Oct. 4, 1890
Do	Samuel Jennison	do	Oct. 17, 1890
Do	Charles Hall Adams	do	Jan. 2, 1891
Nebraska	W. J. Carroll	Omaha	Nov. 10, 1890
New York	Frank B. Wilson	New York City	Oct. 24, 1889
Do	George H. Corey	do	Nov. 16, 1889
Do	Frank W. Fullerton	do	Dec. 13, 1889
Do	Ella F. Braman	do	Dec. 3, 1889
Do	Gerard C. Green	do	Sept. 6, 1890
Do	Charles Nettleton	do	Nov. 20, 1890
Do	W. H. Osborne	do	Jan. 4, 1891
Do	Eleazer Jackson	do	Mar. 11, 1891
Do	John A. Hillery	do	Do.
Do	Frederick A. Burnham	do	Apr. 4, 1891
Do	Joseph B. Braman	do	Apr. 25, 1891
Ohio	Joseph T. Harrison	Cincinnati	Nov. 29, 1889
Do	Gabriel Netter	do	Apr. 10, 1890
Do	Lipman Levy	do	Sept. 17, 1890
Oregon	Eugene D. White	Portland	Jan. 19, 1890
Pennsylvania	Samuel L. Taylor	Philadelphia	June 28, 1890
Do	Thomas J. Hunt	do	Oct. 8, 1890
Do	William Jenks Dell	do	Feb. 5, 1891

STATEHOOD PRELIMINARIES.

In my inaugural address on assuming office, April 9, 1889, I expressed a willingness to co-operate with the people in their efforts towards securing admission. During the month of May a majority of the counties petitioned as follows:

RESOLUTIONS ADOPTED BY COUNTY COMMISSIONERS.

Whereas this board of county commissioners is satisfied, from an examination of Senate bill No. 2445, as unanimously and favorably reported to the United States Senate by the Committee on Territories, that its provisions are absolutely fair for all sections of the Territory of Wyoming; and

Whereas the board is satisfied that there should be immediate action, as there would be greater probability of success by literally and speedily following the provisions of this bill: Therefore be it

Resolved, That this board pledges itself to put into operation the election machinery under the laws of the Territory for the election of delegates to a constitutional convention, and the submission of such constitution as may be presented by the said convention to the people of this county for ratification or rejection, if the governor, chief justice, and secretary of the Territory shall in their wisdom see fit to take the initiatory steps under the provisions of said Senate bill for calling into existence a constitutional convention.

Resolved, That the chairman of this board be instructed to present copies of this resolution to the governor, chief justice, and secretary, with the request that if other counties of the Territory make similar requests they shall divide the Territory into districts, apportion the number of delegates to the several districts or counties, and do such other acts as may be necessary for the convening of such constitutional convention in the manner and form as is provided by the terms of said Senate bill.

APPORTIONMENT FOR DELEGATES.

Whereas the board of county commissioners of seven-tenths of the counties in the Territory of Wyoming have adopted resolutions requesting the governor, chief justice, and secretary to divide the Territory into delegate districts, to apportion the number of delegates among the several districts, and to do such other acts as may be neces-

sary for the convening of a constitutional convention in the manner and form provided by the terms of Senate bill 2445, as reported with amendments to the Senate of the United States on February 27, 1889, by the Committee on Territories; and

Whereas by the terms of said Senate bill it is provided, "The aforesaid delegates to form said convention shall be apportioned within the limits of the proposed State in such districts as may be established, as herein provided, in proportion to the population in each of said districts, as near as may be, to be ascertained at the time of making said apportionment by the persons hereinafter authorized to make the same, upon the basis of the votes cast for Delegate in Congress at the last general election, in each of which districts the number of delegates apportioned to such district shall be elected. That said apportionment shall be made by the governor, the chief justice, and the secretary of the Territory. * * * The number of delegates to said convention shall be fifty-five:"

Now, therefore, we, the governor, chief justice, and secretary of the Territory of Wyoming, do certify that, in pursuance of the said resolutions and of the aforesaid provisions of said Senate bill, we did convene at the capitol, in the city of Cheyenne, on this 3d day of June, 1889, and did then proceed to divide the Territory into delegate districts, and to apportion the number of delegates among the several districts in proportion to the population in each of said districts, as near as may be, upon the basis of the votes cast for Delegate in Congress at the last general election, to wit, on the 6th day of November, 1888. The total number of votes cast for Delegate in Congress at the last general election was 18,010, and the total number of votes cast in each of the counties in the Territory was as follows, to wit:

Laramie County	3,695
Albany County	2,608
Carbon County	2,633
Sweetwater County	1,747
Uinta County	2,037
Fremont County	1,047
Johnson County	916
Sheridan County	870
Crook County	1,150
Converse County	1,307
Total	18,010

It was deemed best to divide the Territory into ten delegate districts, and to make each county a separate district. On dividing the total number of votes cast at said last general election by the number of delegates to be elected, it was ascertained that one delegate should be accredited to each 327 votes, and proceeding upon this basis, the several counties are entitled to delegates as follows: Laramie County, 11 delegates; Albany County, 8 delegates; Carbon County, 8 delegates; Sweetwater County, 5 delegates; Uinta County, 6 delegates; Fremont County, 3 delegates; Johnson County, 3 delegates; Sheridan County, 3 delegates; Crook County, 4 delegates; and Converse County, 4 delegates, making a total of 55 delegates.

We therefore certify that we have this day divided the Territory into the following delegate districts, and apportioned the number of delegates among the several districts as follows, to wit:

1. The county of Laramie shall constitute the first district and shall elect eleven delegates.

2. The county of Albany shall constitute the second district and shall elect eight delegates.

3. The county of Carbon shall constitute the third district and shall elect eight delegates.

4. The county of Sweetwater shall constitute the fourth district and shall elect five delegates.

5. The county of Uinta shall constitute the fifth district and shall elect six delegates.

6. The county of Fremont shall constitute the sixth district and shall elect three delegates.

7. The county of Sheridan shall constitute the seventh district and shall elect three delegates.

8. The county of Johnson shall constitute the eighth district and shall elect three delegates.

9. The county of Crook shall constitute the ninth district and shall elect four delegates.

10. The county of Converse shall constitute the tenth district and shall elect four delegates.

We believe that this Territory is justly entitled to admission as a State, and that it is for the best interests of the Territory and its people that a constitution should be

adopted and a State government organized, and application respectfully and earnestly made to the Congress of the United States for the immediate admission of the proposed State of Wyoming.

In witness whereof we have hereunto set our hands at Cheyenne this third day of June, 1889.

FRANCIS E. WARREN,
Governor.

W. L. MAGINNIS,
Chief Justice.

S. D. SHANNON,
Secretary.

PROCLAMATION BY THE GOVERNOR.

Whereas the Territory of Wyoming has the population, material resources, public intelligence, and morality necessary to insure a stable local government therein; and

Whereas it has never been deemed a violation of their duties as loyal citizens of the United States for the people of a Territory to form for themselves a constitution and State government and to apply to Congress for admission to statehood; and

Whereas, on the 27th day of February, 1889, a bill, with amendments, entitled "A bill to provide for the formation and admission into the Union of the State of Wyoming, and for other purposes," was favorably reported to the Senate of the United States by the Committee on Territories; and a bill providing, among other things, for the admission of the proposed State of Wyoming having been reported favorably to the House of Representatives by a like committee; and many members of the House and Senate having expressed opinions favorable to such admission; and it thus being made evident that Congress is disposed to admit Wyoming as a State whenever a suitable constitution is adopted and a State government is formed preparatory to admission; and

Whereas, by the general expression of the citizens thereof, the executive is convinced that a very large majority of the people of Wyoming are desirous of forming for themselves a constitution and State government, and of being admitted into the Union, and of exercising the rights and privileges guaranteed to a free and loyal people under the Constitution of the United States; and

Whereas the board of county commissioners of several counties in the Territory have, by resolution, requested the governor to call a constitutional convention, and have requested the governor, chief justice, and secretary of the Territory to divide the Territory into delegate districts, to apportion the number of delegates among the several districts, and to do such other acts as may be necessary for the convening of such constitutional convention in the manner and form provided by the terms of the said Senate bill; and

Whereas the governor, chief justice, and secretary of the Territory, on this third day of June, 1889, did convene at the capitol in the city of Cheyenne, and did apportion the number of delegates among the several districts so established, upon the basis of the vote cast for delegate in Congress at the last general election, as follows, to wit:

1. The county of Laramie shall constitute the first district and shall elect eleven delegates;
2. The county of Albany shall constitute the second district and shall elect eight delegates;
3. The county of Carbon shall constitute the third district and shall elect eight delegates;
4. The county of Sweetwater shall constitute the fourth district and shall elect five delegates;
5. The county of Uinta shall constitute the fifth district and shall elect six delegates;
6. The county of Fremont shall constitute the sixth district and shall elect three delegates;
7. The county of Sheridan shall constitute the seventh district and shall elect three delegates;
8. The county of Johnson shall constitute the eighth district and shall elect three delegates;
9. The county of Crook shall constitute the ninth district and shall elect four delegates;
10. The county of Converse shall constitute the tenth district and shall elect four delegates;

Now, therefore, recognizing the superior and material advantages of a State government over our Territorial system, and being desirous of carrying into effect the

will of the people, I, Francis E. Warren, governor of the Territory of Wyoming, do issue this, my proclamation, to the people of the Territory, recommending that they take such action on their part as may be necessary to secure the admission of Wyoming into the Union of States; and for this purpose I direct that an election be held throughout the Territory, on the second Monday of July, 1889, for the election of delegates to a constitutional convention to convene at Chepenne, the capital of the Territory, at 12 o'clock noon of the first Monday of September, 1889, for the purpose of framing a constitution for the State of Wyoming, and for the purpose of submitting such constitution to the people thereof for their ratification or rejection.

I suggest that, in organizing a State government preparatory to admission, the provisions of the aforesaid Senate bill should be followed as nearly as may be possible; and in pursuance thereof the following recommendations are hereby made:

First.—The number of delegates to such constitutional convention shall be fifty-five, apportioned among the several districts as hereinbefore set forth.

Second.—The delegates apportioned to each district shall be elected exclusively in that district.

Third.—Persons who are qualified by the laws of the Territory to vote for representatives to the legislative assembly thereof are hereby authorized to vote for and choose delegates to such constitutional convention.

Fourth.—The qualifications for delegates to such constitutional convention shall be such as, by the laws of the Territory, persons are required to possess to be eligible to the legislative assembly thereof.

Fifth.—Such election shall be conducted, the returns made, the result ascertained, and the certificates to persons elected to such convention issued, in the same manner as is prescribed by the laws of the Territory regulating elections therein for delegate to Congress.

Sixth.—Since the advantages to be obtained by statehood will depend somewhat upon the judicious action of the constitutional convention, it is desirable that the delegates should be representative men, of character and ability, whose work will be satisfactory to Congress and beneficial to the people of the proposed State of Wyoming. The character and fitness of the delegates to be chosen is in fact of greater importance than the manner of their selection, and if the citizens of any county generally prefer to elect their delegates by some equitable method other than that heretofore prescribed, it is believed that the delegates so chosen will be recognized and admitted to seats in the convention.

Seventh.—The constitution formed by such convention shall be submitted to the people of the Territory for ratification or rejection on the first Tuesday in November, 1889.

Eighth.—The convention should fix the per diem and mileage of its members and employés, and certificates of service and expenditure should be made by the officers of the convention and filed with the Secretary of the Territory, as Congress will, without doubt, follow its own precedents in providing for the payment thereof.

In testimony whereof I have hereunto set my hand and caused the great seal of the Territory of Wyoming to be affixed at Cheyenne, the capital, on this third day of June, in the year of our Lord one thousand eight hundred and eighty-nine, and of the independence of the United States of America the one hundred and thirteenth.

[SEAL.]

FRANCIS E. WARREN.

By the governor:

SAMUEL D. SHANNON,
Secretary of Territory.

PROPOSED CONSTITUTION OF THE STATE OF WYOMING.

PREAMBLE.

We, the people of the State of Wyoming, grateful to God for our civil, political, and religious liberties, and desiring to secure them to ourselves and perpetuate them to our posterity, do ordain and establish this Constitution.

ARTICLE NO. I.

DECLARATION OF RIGHTS.

SECTION 1. All power is inherent in the people, and all free governments are founded on their authority, and instituted for their peace, safety, and happiness; for the advancement of these ends they have at all times an inalienable and indefeasible right

to alter, reform, or abolish the government in such manner as they may think proper.

SEC. 2. In their inherent right to life, liberty, and the pursuit of happiness all members of the human race are equal.

SEC. 3. Since equality in the enjoyment of natural and civil rights is only made sure through political equality, the laws of this State affecting the political rights and privileges of its citizens shall be without distinction of race, color, sex, or any circumstance or condition whatsoever other than individual incompetency or unworthiness, duly ascertained by a court of competent jurisdiction.

SEC. 4. The right of the people to be secure in their persons, houses, papers, and effects against unreasonable searches and seizures shall not be violated, and no warrant shall issue but upon probable cause, supported by affidavit, particularly describing the place to be searched or the person or thing to be seized.

SEC. 5. No person shall be imprisoned for debt except in cases of fraud.

SEC. 6. No person shall be deprived of life, liberty, or property without due process of law.

SEC. 7. Absolute, arbitrary power over the lives, liberty, and property of freemen exists nowhere in a republic, not even in the largest majority.

SEC. 8. All courts shall be open and every person, for an injury done to person, reputation, or property, shall have justice administered without sale, denial, or delay. Suits may be brought against the State in such manner and in such courts as the legislature may by law direct.

SEC. 9. The right of trial by jury shall remain inviolate in criminal cases, but a jury in civil cases in all courts, or in criminal cases in courts not of record, may consist of less than twelve men, as may be prescribed by law. Hereafter a grand jury may consist of twelve men, any nine of whom concurring may find an indictment, but the legislature may change, regulate, or abolish the grand-jury system.

SEC. 10. In all criminal prosecutions the accused shall have the right to defend in person and by counsel, to demand the nature and cause of the accusation, to have a copy thereof, to be confronted with the witnesses against him, to have compulsory process served for obtaining witnesses, and to a speedy trial by an impartial jury of the county or district in which the offense is alleged to have been committed.

SEC. 11. No person shall be compelled to testify against himself in any criminal case, nor shall any person be twice put in jeopardy for the same offence. If the jury disagree, or if the judgment be arrested after a verdict, or if the judgment be reversed for error in law, the accused shall not be deemed to have been in jeopardy.

SEC. 12. No person shall be detained as a witness in any criminal prosecution longer than may be necessary to take his testimony or deposition, nor be confined in any room where criminals are imprisoned.

SEC. 13. Until otherwise provided by law, no person shall, for a felony, be proceeded against criminally, otherwise than by indictment, except in cases arising in the land or naval forces, or in the militia when in actual service in time of war or public danger.

SEC. 14. All persons shall be bailable by sufficient sureties, except for capital offences when the proof is evident or the presumption great. Excessive bail shall not be required, nor excessive fines imposed, nor shall cruel or unusual punishment be inflicted.

SEC. 15. The penal code shall be framed on the humane principles of reformation and prevention.

SEC. 16. No person arrested and confined in jail shall be treated with unnecessary rigor. The erection of safe and comfortable prisons, and inspection of prisons, and the humane treatment of prisoners shall be provided for.

SEC. 17. The privilege of the writ of habeas corpus shall not be suspended unless, when in case of rebellion or invasion, the public safety may require it.

SEC. 18. The free exercise and enjoyment of religious profession and worship without discrimination or preference shall be forever guaranteed in this State, and no person shall be rendered incompetent to hold any office of trust or profit, or to serve as a witness or juror, because of his opinion on any matter of religious belief whatever, but the liberty of conscience hereby secured shall not be so construed as to excuse acts of licentiousness or justify practices inconsistent with the peace or safety of the State.

SEC. 19. No money of the State shall ever be given or appropriated to any sectarian or religious society or institution.

SEC. 20. Every person may freely speak, write, and publish on all subjects, being responsible for the abuse of that right; and in all trials for libel, both civil and criminal, the truth, when published with good intent and justifiable ends, shall be a sufficient defense, the jury having the right to determine the facts and the law, under direction of the court.

SEC. 21. The right of petition, and of the people peaceably to assemble to consult for the common good, and to make known their opinions, shall never be denied or abridged.

SEC. 22. The rights of labor shall have just protection through laws calculated to secure to the laborer proper rewards for his service and to promote the industrial welfare of the State.

SEC. 23. The right of citizens to opportunities for education should have practical recognition. The legislature shall suitably encourage means and agencies calculated to advance the sciences and liberal arts.

SEC. 24. The right of citizens to bear arms in defense of themselves and of the State shall not be denied.

SEC. 25. The military shall ever be in strict subordination to the civil power. No soldier in time of peace shall be quartered in any house without consent of the owner, nor in time of war except in the manner prescribed by law.

SEC. 26. Treason against the State shall consist only in levying war against it, or in adhering to its enemies, or in giving them aid and comfort. No person shall be convicted of treason unless on the testimony of two witnesses to the same overt act, or on confession in open court; nor shall any person be attainted of treason by the legislature.

SEC. 27. Elections shall be open, free, and equal, and no power, civil or military, shall at any time interfere to prevent an untrammelled exercise of the right of suffrage.

SEC. 28. No tax shall be imposed without the consent of the people or their authorized representatives. All taxation shall be equal and uniform.

SEC. 29. No distinction shall ever be made by law between resident aliens and citizens as to the possession, taxation, enjoyment, and descent of property.

SEC. 30. Perpetuities and monopolies are contrary to the genius of a free State, and shall not be allowed. Corporations being creatures of the State, endowed for the public good with a portion of its sovereign powers, must be subject to its control.

SEC. 31. Water being essential to industrial prosperity, of limited amount, and easy of diversion from its natural channels, its control must be in the State, which, in providing for its use, shall equally guard all the various interests involved.

SEC. 32. Private property shall not be taken for private use unless by consent of the owner, except for private ways of necessity, and for reservoirs, drains, flumes, or ditches on or across the lands of others for agricultural, mining, milling, domestic, or sanitary purposes, nor in any case without due compensation.

SEC. 33. Private property shall not be taken or damaged for public or private use without just compensation.

SEC. 34. All laws of a general nature shall have a uniform operation.

SEC. 35. No *ex post facto* law, nor any law impairing the obligation of contracts, shall ever be made.

SEC. 36. The enumeration of this constitution of certain rights shall not be construed to deny, impair, or disparage others retained by the people.

SEC. 37. The State of Wyoming is an inseparable part of the Federal Union, and the Constitution of the United States is the supreme law of the land.

ARTICLE NO. II.

DISTRIBUTION OF POWERS.

SECTION 1. The powers of the government of this State are divided into three distinct departments: The legislative, executive, and judicial, and no person or collection of persons charged with the exercise of powers properly belonging to one of these departments shall exercise any powers properly belonging to either of the others, except as in this constitution expressly directed or permitted.

ARTICLE NO. III.

LEGISLATIVE DEPARTMENT.

SECTION 1. The legislative power shall be vested in a senate and house of representatives, which shall be designated "The legislature of the State of Wyoming."

SEC. 2. Senators shall be elected for the term of four (4) years and representatives for the term of two (2) years. The senators elected at the first election shall be divided by lot into two classes as nearly equal as may be. The seats of senators of the first class shall be vacated at the expiration of the first two years, and of the second class at the expiration of four years. No person shall be a senator who has not attained the age of twenty-five years, or a representative who has not attained the age of twenty-one years, and who is not a citizen of the United States and of this State, and who has not, for at least twelve months next preceding his election, resided within the county or district in which he was elected.

SEC. 3. Each county shall constitute a senatorial and representative district; the

senate and house of representatives shall be composed of members elected by the legal voters of the counties, respectively, every two (2) years. They shall be apportioned among the said counties as nearly as may be according to the number of their inhabitants. Each county shall have at least one senator and one representative; but at no time shall the number of members of the house of representatives be less than twice nor greater than three times the number of members of the senate. The senate and house of representatives first elected in pursuance of this constitution shall consist of sixteen and thirty-three members, respectively.

SEC. 4. When vacancies occur in either house by death, resignation, or otherwise, such vacancy shall be filled for the remainder of the term by special election, to be called in such manner as may be prescribed by law.

SEC. 5. Members of the senate and house of representatives shall be elected on the day provided by law for the general election of a member of Congress, and their term of office shall begun on the first Monday of January thereafter.

SEC. 6. Each member of the first legislature, as a compensation for his services, shall receive five dollars for each day's attendance, and fifteen cents for each mile traveled in going to and returning from the seat of government to his residence by the usual traveled route, and shall receive no other compensation, perquisite, or allowance whatever. No session of the legislature after the first, which may be sixty days, shall exceed forty days. After the first session the compensation of the members of the legislature shall be as provided by law; but no legislature shall fix its own compensation.

SEC. 7. The legislature shall meet at the seat of government at twelve o'clock noon on the second Tuesday of January next succeeding the general election provided by law, and at twelve o'clock noon on the second Tuesday of January of each alternate year thereafter, and at other times when convened by the governor.

SEC. 8. No senator or representative shall, during the term for which he was elected, be appointed to any civil office under the State, and no member of Congress or other person holding an office (except that of notary public or an office in the militia) under the United States or this State shall be a member of either house during his continuance in office.

SEC. 9. No member of either house shall, during the term for which he was elected, receive any increase of salary or mileage under any law passed during such term.

SEC. 10. The senate shall, at the beginning and close of each regular session and at such other times as may be necessary, elect one of its members president, the house of representatives shall elect one of its members speaker, each house shall choose its other officers, and shall judge of the election returns and qualifications of its members.

SEC. 11. A majority of each house shall constitute a quorum to do business, but a smaller number may adjourn from day to day, and compel the attendance of absent members in such manner and under such penalties as each house may prescribe.

SEC. 12. Each house shall have power to determine the rules of its proceedings, and punish its members or other persons for contempt or disorderly behavior in its presence; to protect its members against violence or offers of bribes or private solicitation, and with the concurrence of two-thirds to expel a member, and shall have all other powers necessary to the legislature of a free State. A member expelled for corruption shall not thereafter be eligible to either house of the legislature; and punishment for contempt or disorderly behavior shall not bar a criminal prosecution for the same offense.

SEC. 13. Each house shall keep a journal of its proceedings, and may, in its discretion, from time to time publish the same, except such parts as require secrecy, and the yeas and nays on any question shall, at the request of any two members, be entered on the journal.

SEC. 14. The sessions of each house and of the committee of the whole shall be open, unless the business is such as requires secrecy.

SEC. 15. Neither house shall, without the consent of the other, adjourn for more than three days, nor to any other place than that in which the two houses shall be sitting.

SEC. 16. The members of the legislature shall, in all cases except treason, felony, violation of their oath of office, and breach of the peace, be privileged from arrest during their attendance at the sessions of their respective houses, and in going to and returning from the same; and for any speech or debate in either house they shall not be questioned in any other place.

SEC. 17. The sole power of impeachment shall vest in the house of representatives, the concurrence of a majority of all the members being necessary to the exercise thereof. Impeachment shall be tried by the senate sitting for that purpose, and the senators shall be upon oath or affirmation to do justice according to law and evidence. When the governor is on trial the chief justice of the supreme court shall preside. No person shall be convicted without a concurrence of two-thirds of the senators elected.

SEC. 18. The governor and other State and judicial officers, except justices of the peace, shall be liable to impeachment for high crimes and misdemeanors, or malfeasance in office, but judgment in such cases shall only extend to removal from office and disqualification to hold any office of honor, trust, or profit under the laws of the State. The party, whether convicted or acquitted, shall, nevertheless, be liable to prosecution, trial, judgment, and punishment according to law.

SEC. 19. All officers not liable to impeachment shall be subject to removal for misconduct or malfeasance in office in such manner as may be provided by law.

SEC. 20. No law shall be passed except by bill and no bill shall be so altered or amended on its passage through either house as to change its original purpose.

SEC. 21. The enacting clause of every law shall be as follows: "Be it enacted by the legislature of the State of Wyoming."

SEC. 22. No bill for the appropriation of money, except for the expenses of the government, shall be introduced within five (5) days of the close of the session except by unanimous consent of the house in which it is sought to be introduced.

SEC. 23. No bill shall be considered or become a law unless referred to a committee, returned therefrom, and printed for the use of the members.

SEC. 24. No bill, except general appropriation bills and bills for the codification and general revision of the laws, shall be passed containing more than one subject, which shall be clearly expressed in its title; but if any subject is embraced in any act which is not expressed in the title, such act shall be void only as to so much thereof as shall not be so expressed.

SEC. 25. No bill shall become a law, except by a vote of a majority of all the members elected to each house, nor unless on its final passage the vote taken by ayes and noes, and the names of those voting be entered on the journal.

SEC. 26. No law shall be revised or amended, or the provisions thereof extended by reference to its title only, but so much thereof as is revised, amended, or extended, shall be re-enacted and published at length.

SEC. 27. The legislature shall not pass local or special laws in any of the following enumerated cases, that is to say: For granting divorces; laying out, opening, altering, or working roads or highways; vacating roads, town plats, streets, alleys, or public grounds; locating or changing county seats; regulating county or township affairs; incorporation of cities, towns, or villages, or changing or amending the charters of any cities, towns, or villages; regulating the practice in courts of justice; regulating the jurisdiction and duties of justices of the peace, police magistrates, or constables; changing the rules of evidence in any trial or inquiry; providing for changes of venue in civil or criminal cases; declaring any person of age; for limitation of civil actions; giving effect to any informal or invalid deeds; summoning or impanneling grand or petit juries; providing for the management of common schools; regulating the rate of interest on money; the opening or conducting of any election, or designating the place of voting; the sale or mortgage of real estate belonging to minors or others under disability; chartering or licensing ferries or bridges or toll roads; chartering banks, insurance companies, and loan and trust companies; remitting fines, penalties, or forfeitures; creating, increasing, or decreasing fees, percentages, or allowances of public officers; changing the law of descent; granting to any corporation, association, or individual the right to lay down railroad tracks, or any special or exclusive privilege, immunity, or franchise whatever, or amending existing charter for such purpose; for punishment of crimes; changing the names of persons or places; for the assessment or collection of taxes; affecting estates of deceased persons, minors, or others under legal disabilities; extending the time for the collection of taxes; refunding money paid into the State treasury; relinquishing or extinguishing, in whole or in part, the indebtedness, liabilities, or obligation of any corporation or person to this State or to any municipal corporation therein; exempting property from taxation; restoring to citizenship persons convicted of infamous crimes; authorizing the creation, extension, or impairing of liens; creating offices or prescribing the powers or duties of officers in counties, cities, townships, or school districts; or authorizing the adoption or legitimation of children. In all other cases where a general law can be made applicable no special law shall be enacted.

SEC. 28. The presiding officer of each house shall, in the presence of the house over which he presides, sign all bills and joint resolutions passed by the legislature immediately after their titles have been publicly read, and the fact of signing shall be at once entered upon the journal.

SEC. 29. The legislature shall prescribe by law the number, duties, and compensation of the officers and employés of each house, and no payment shall be made from the State treasury, or be in any way authorized to any such person except to an acting officer or employé elected or appointed in pursuance of law.

SEC. 30. No bill shall be passed giving any extra compensation to any public officer, servant or employé, agent or contractor, after services are rendered or contract made.

SEC. 31. All stationery, printing, paper, fuel, and lights used in the legislature and other departments of government shall be furnished, and the printing and binding

of the laws, journals, and department reports, and other printing and binding, and the repairing and furnishing the halls and rooms used for the meeting of the legislature and its committees shall be performed under contract, to be given to the lowest responsible bidder, below such maximum price and under such regulations as may be prescribed by law. No member or officer of any department of the Government shall be in any way interested in any such contract; and all such contracts shall be subject to the approval of the governor and State treasurer.

SEC. 32. Except as otherwise provided in this constitution, no law shall extend the term of any public officer or increase or diminish his salary or emoluments after his election or appointment; but this shall not be construed to forbid the legislature from fixing the salaries or emoluments of those officers first elected or appointed under this constitution, if such salaries or emoluments are not fixed by its provisions.

SEC. 33. All bills for raising revenue shall originate in the house of representatives; but the senate may propose amendments as in case of other bills.

SEC. 34. The general appropriation bills shall embrace nothing but appropriations for the ordinary expenses of the legislative, executive, and judicial departments of the State, interest on the public debt, and for public schools. All other appropriations shall be made by separate bills, each embracing but one object.

SEC. 35. Except for interest on public debt money shall be paid out of the treasury only on appropriations made by the legislature, and in no case otherwise than upon warrant drawn by the proper officer in pursuance of law.

SEC. 36. No appropriation shall be made for charitable, industrial, educational, or benevolent purposes to any person, corporation, or community not under the absolute control of the State, nor to any denominational or sectarian institution or association.

SEC. 37. The legislature shall not delegate to any special commissioner, private corporation or association any power to make, supervise, or interfere with any municipal improvements, moneys, property, or effects, whether held in trust or otherwise, to levy taxes, or to perform any municipal functions whatever.

SEC. 38. No act of the legislature shall authorize the investment of trust funds by executors, administrators, guardians, or trustees in the bonds or stock of any private corporation.

SEC. 39. The legislature shall have no power to pass any law authorizing the State or any county in the State to contract any debt or obligation in the construction of any railroad, or give or loan its credit to or in aid of the construction of the same.

SEC. 40. No obligation or liability of any person, association, or corporation, held or owned by the State, or any municipal corporation therein shall ever be exchanged, transferred, remitted, released, or postponed, or in any way diminished by the legislature; nor shall such liability or obligation be extinguished, except by the payment thereof into the proper treasury.

SEC. 41. Every order, resolution, or vote in which the concurrence of both houses may be necessary, except on the question of adjournment, or relating solely to the transaction of the business of the two houses, shall be presented to the governor, and before it shall take effect be approved by him, or, being disapproved, be re-passed by two-thirds of both houses, as prescribed in the case of a bill.

SEC. 42. If any person elected to either house of the legislature shall offer or promise to give his vote or influence in favor of or against any measure or proposition, pending or to be introduced into the legislature in consideration or upon condition that any other person elected to the same legislature will give, or promise or assent to give, his vote or influence in favor of or against any other measure or proposition pending or proposed to be introduced into such legislature, the person making such offer or promise shall be deemed guilty of solicitation of bribery. If any member of the legislature shall give his vote or influence for or against any measure or proposition pending or to be introduced in such legislature, or offer, promise or assent thereto, upon condition that any other member will give or will promise or assent to give his vote or influence in favor of or against any other measure or proposition pending or to be introduced in such legislature, or in consideration that any other member has given his vote or influence for or against any other measure or proposition in such legislature, he shall be deemed guilty of bribery, and any member of the legislature, or person elected thereto, who shall be guilty of either of such offenses shall be expelled and shall not thereafter be eligible to the legislature, and on conviction thereof in the civil courts shall be liable to such further penalty as may be prescribed by law.

SEC. 43. Any person who shall directly or indirectly offer, give, or promise any money or thing of value, testimonial, privilege, or personal advantage, to any executive or judicial officer or member of the legislature, to influence him in the performance of any of his official duties shall be deemed guilty of bribery, and be punished in such manner as shall be provided by law.

SEC. 44. Any person may be compelled to testify in any lawful investigation or judicial proceeding against any person who may be charged with having committed the offense of bribery or corrupt solicitation, or practices of solicitation, and shall not

be permitted to withhold his testimony upon the ground that it may criminate himself or subject him to public infamy; but such testimony shall not afterwards be used against him in any judicial proceedings, except for perjury in giving such testimony, and any person convicted of either of the offenses aforesaid shall, as part of the punishment therefor, be disqualified from holding any office or position of honor, trust, or profit in this State.

SEC. 45. The offense of corrupt solicitation of members of the legislature or of public officers of the State, or of any municipal division thereof, and the occupation or practice of solicitation of such members or officers to influence their official action shall be defined by law, and shall be punishable by fine and imprisonment.

SEC. 46. A member who has a personal or private interest in any measure or bill proposed or pending before the legislature shall disclose the fact to the house of which he is a member, and shall not vote thereon.

APPORTIONMENT.

SEC. 1. One representative in the Congress of the United States shall be elected from the State at large the Tuesday next after the first Monday in November, 1890, and thereafter at such times and places and in such manner as may be prescribed by law. When a new apportionment shall be made by Congress the legislature shall divide the State into Congressional districts accordingly.

SEC. 2. The legislature shall provide by law for an enumeration of the inhabitants of the State in the year 1895, and every tenth year thereafter, and at the session next following such enumeration, and also at the session next following an enumeration made by the authority of the United States, shall revise and adjust the apportionment for senators and representatives on a basis of such enumeration, according to ratios to be fixed by law.

SEC. 3. Representative districts may be altered from time to time as public convenience may require. When a representative district shall be composed of two or more counties, they shall be contiguous, and the districts as compact as may be. No county shall be divided, in the formation of representative districts.

SEC. 4. Until an apportionment of senators and representatives as otherwise provided by law, they shall be divided among the several counties of the State in the following manner:

Albany County, two senators and five representatives.

Carbon County, two senators and five representatives.

Converse County, one senator and three representatives.

Crook County, one senator and two representatives.

Fremont County, one senator and two representatives.

Laramie County, three senators and six representatives.

Johnson County, one senator and two representatives.

Sheridan County, one senator and two representatives.

Sweetwater County, two senators and three representatives.

Uinta County, two senators and three representatives.

ARTICLE No. 4.

EXECUTIVE DEPARTMENT.

SECTION 1. The executive power shall be vested in a governor, who shall hold his office for the term of four (4) years, and until his successor is elected and duly qualified.

SEC. 2. No person shall be eligible to the office of governor unless he be a citizen of the United States and a qualified elector of the State, who has attained the age of thirty years, and who has resided five years next preceding the election within the State or Territory, nor shall he be eligible to any other office during the term for which he was elected.

SEC. 3. The governor shall be elected by the qualified electors of the State at the time and place of choosing members of the legislature. The person having the highest number of votes for governor shall be declared elected, but if two or more shall have an equal and highest number of votes for governor, the two houses of the legislature at its next regular session shall forthwith, by joint ballot, choose one of such persons for said office. The returns of the election for governor shall be made in such manner as shall be prescribed by law.

SEC. 4. The governor shall be commander-in-chief of the military forces of the State, except when they are called into the service of the United States, and may call out the same to execute the laws, suppress insurrection, and repel invasion. He shall have power to convene the legislature on extraordinary occasions. He shall at the commencement of each session communicate to the legislature by message informa-

tion of the condition of the State, and recommend such measures as he shall deem expedient. He shall transact all necessary business with the officers of the government, civil and military. He shall expedite all such measures as may be resolved upon by the legislature, and shall take care that the laws be faithfully executed.

SEC. 5. The governor shall have power to remit fines and forfeitures, to grant reprieves, commutations, and pardons after conviction, for all offenses except treason and cases of impeachment; but the legislature may by law regulate the manner in which the remission of fines, pardons, commutations, and reprieves may be applied for. Upon conviction for treason he shall have power to suspend the execution of sentence until the case is reported to the legislature at its next regular session, when the legislature shall either pardon or commute the sentence, direct the execution of the sentence, or grant further reprieve. He shall communicate to the legislature at each regular session each case of remission of fine, reprieve, commutation, or pardon granted by him, stating the name of the convict, the crime for which he was convicted, the sentence and its date, and the date of the remission, commutation, pardon, or reprieve, with his reasons for granting the same.

SEC. 6. If the governor be impeached, displaced, resign, or die, or from mental or physical disease or otherwise become incapable of performing the duties of his office, or be absent from the State, the secretary of state shall act as governor until the vacancy is filled or the disability removed.

SEC. 7. When any office from any cause becomes vacant, and no mode is provided by the constitution or law for filling such vacancy, the governor shall have power to fill the same by appointment.

SEC. 8. Every bill which has passed the legislature shall, before it becomes a law, be presented to the governor. If he approve, he shall sign; but if not, he shall return it with his objections to the house in which it originated, which shall enter the objections at large upon the journal and proceed to reconsider it. If, after such reconsideration, two-thirds of the members elected agree to pass the bill, it shall be sent, together with the objections, to the other house, by which it shall likewise be reconsidered, and if it be approved by two-thirds of the members elected it shall become a law; but in all such cases the vote of both houses shall be determined by the yeas and nays, and the names of the members voting for and against the bill shall be entered upon the journal of each house respectively. If any bill is not returned by the governor within three days (Sundays excepted) after its presentation to him, the same shall be a law, unless the legislature by its adjournment prevent its return, in which case it shall be a law unless he shall file the same with his objections in the office of the secretary of state within fifteen days after such adjournment.

SEC. 9. The governor shall have power to disapprove of any item or items or part or parts of any bill making appropriations of money or property embracing distinct items, and the part or parts of the bill approved shall be the law, and the item or items and part or parts disapproved shall be void unless enacted in the following manner: If the legislature be in session he shall transmit to the house in which the bill originated a copy of the item or items, or part or parts thereof disapproved, together with his objections thereto, and the items or parts objected to shall be separately reconsidered, and each item or part shall then take the same course as is prescribed for the passage of bills over the executive veto.

SEC. 10. Any governor of this State who asks, receives, or agrees to receive any bribe upon any understanding that his official opinion, judgment, or action shall be influenced thereby, or who gives, or offers, or promises his official influence in consideration that any member of the legislature shall give his official vote or influence on any particular side of any question or matter upon which he is required to act in his official capacity, or who menaces any member by the threatened use of his veto power, or who offers or promises any member that he, the governor, will appoint any particular person or persons to any office created or thereafter to be created, in consideration that any member shall give his official vote or influence on any matter pending or thereafter to be introduced into either house of said legislature; or who threatens any member that he, the governor, will remove any person or persons from office or position with intent in any manner to influence the action of said member, shall be punished in the manner now or that may hereafter be provided by law, and upon conviction thereof shall forfeit all right to hold or exercise any office of trust or honor in this State.

SEC. 11. There shall be chosen by the qualified electors of the State, at the times and places of choosing members of the legislature, a secretary of state, auditor, treasurer, and superintendent of public instruction, who shall have attained the age twenty-five years respectively, shall be citizens of the United States, and shall have the qualifications of State electors. They shall severally hold their offices at the seat of government for the term of four (4) years and until their successors are elected and duly qualified, but no person shall be eligible for the office of treasurer for four (4) years after the expiration of the term for which he was elected. The legislature may provide for such other State officers as are deemed necessary.

SEC. 12. The powers and duties of the secretary of state, of State auditor, treasurer, and superintendent of public instruction, shall be as prescribed by law.

SEC. 13. Until otherwise provided by law, the governor shall receive an annual salary of two thousand five hundred dollars; the secretary of state, State auditor, State treasurer, and superintendent of public instruction shall each receive an annual salary of two thousand dollars; and the salaries of any of the said officers shall not be increased or diminished during the period for which they were elected, and all fees and profits arising from any of the said offices shall be covered into the State treasury.

SEC. 14. The legislature shall provide for a State examiner, who shall be appointed by the governor and confirmed by the senate. His duty shall be to examine the accounts of State treasurer, supreme court clerks, district court clerks, and all county treasurers and treasurers of such other public institutions as the law may require, and shall perform such other duties as the legislature may prescribe. He shall report at least once a year, and oftener if required, to such officers as are designated by the legislature. His compensation shall be fixed by law.

SEC. 15. There shall be a seal of State, which shall be called the "Great seal of the State of Wyoming." It shall be kept by the secretary of state and used by him officially as directed by law.

SEC. 16. The seal of the Territory of Wyoming as now used shall be the seal of the State until otherwise provided by law.

ARTICLE V

JUDICIAL DEPARTMENT.

SECTION 1. The judicial power of the State shall be vested in the senate, sitting as a court of impeachment, in a supreme court, district courts, justices of the peace, courts of arbitration, and such courts as the legislature may by general law establish for incorporated cities or incorporated towns.

SEC. 2. The supreme court shall have general appellate jurisdiction, co-extensive with the State, in both civil and criminal causes and shall have a general superintending control over all inferior courts under such rules and regulations as may be prescribed by law.

SEC. 3. The supreme court shall have original jurisdiction in quo warranto and mandamus as to all State officers, and in habeas corpus. The supreme court shall also have power to issue writs of mandamus, review, prohibition, habeas corpus, certiorari, and other writs necessary and proper to the complete exercise of its appellate and revisory jurisdiction. Each of the judges shall have power to issue writs of habeas corpus to any part of the State upon petition by or on behalf of a person held in actual custody, and may make such writs returnable before himself or before the supreme court, or before any district court of the State or any judge thereof.

SEC. 4. The supreme court of the State shall consist of three justices, who shall be elected by the qualified electors of the State at a general State election at the times and places at which State officers are elected; and their term of office shall be eight (8) years commencing from and after the first Monday in January next succeeding their election; and the justices elected at the first election after this constitution shall go into effect shall, at their first meeting provided by law, so classify themselves by lot that one of them shall go out of office at the end of four (4) years and one at the end of six (6) years and one at the end of eight (8) years from the commencement of their term, and an entry of such classification shall be made in the record of the court and signed by them, and a duplicate thereof shall be filed in the office of the secretary of state. The justice having the shortest term to serve, and not holding his office by appointment or election to fill a vacancy, shall be the chief justice and shall preside at all terms of the supreme court, and in case of his absence the justice having in like manner the next shortest term to serve shall preside in his stead. If a vacancy occur in the office of a justice of the supreme court the governor shall appoint a person to hold the office until the election and qualification of a person to fill the unexpired term occasioned by such vacancy, which election shall take place at the next succeeding general election. The first election of the justices shall be at the first general election after this constitution shall go into effect.

SEC. 5. A majority of the justices of the supreme court shall be necessary to constitute a quorum for the transaction of business.

SEC. 6. In case a judge of the supreme court shall be in any way interested in a cause brought before such court the remaining judges of said court shall call one of the district judges to sit with them on the hearing of said cause.

SEC. 7. At least two terms of the supreme court shall be held annually at the seat of government at such times as may be provided by law.

SEC. 8. No person shall be eligible to the office of justice of the supreme court

unless he be learned in the law, has been in actual practice at least nine (9) years, or whose service on the bench of any court of record when added to the time he may have practiced law shall be equal to nine (9) years, be at least thirty years of age and a citizen of the United States, nor unless he shall have resided in this State or Territory at least three years.

SEC. 9. There shall be a clerk of the supreme court, who shall be appointed by the justices of said court and shall hold his office during their pleasure, and whose duties and emoluments shall be as provided by law.

SEC. 10. The district court shall have original jurisdiction of all causes both at law and in equity, and in all criminal cases, of all matters of probate and insolvency, and of such special cases and proceedings as are not otherwise provided for. The district court shall also have original jurisdiction in all cases and of all proceedings in which jurisdiction shall not have been by law vested exclusively in some other court; and said court shall have the power of naturalization and to issue papers there for. They shall have such appellate jurisdiction in cases arising in justices' and other inferior courts in their respective counties as may be prescribed by law. Said courts and their judges shall have power to issue writs of mandamus, quo warranto, review, certiorari, prohibition, injunction, and writs of habeas corpus, on petition by or on behalf of any person in actual custody in their respective districts.

SEC. 11. The judges of the district courts may hold courts for each other and shall do so when required by law.

SEC. 12. No person shall be eligible to the office of judge of the district court unless he be learned in the law, be at least twenty-eight years of age, and a citizen of the United States, nor unless he shall have resided in the State or Territory of Wyoming at least two years next preceding his election.

SEC. 13. There shall be a clerk of the district court in each organized county in which a court is holden, who shall be elected, or, in case of vacancy, appointed in such manner and with such duties and compensation as may be prescribed by law.

SEC. 14. The legislature shall provide by law for the appointment by the several district courts of one or more district court commissioners (who shall be persons learned in the law) in each organized county in which a district court is holden; such commissioners shall have authority to perform such chamber business in the absence of the district judge from the county or upon his written statement filed with the papers, that it is improper for him to act, as may be prescribed by law, to take depositions and perform such other duties, and receive such compensation as shall be prescribed by law.

SEC. 15. The style of all process shall be "The State of Wyoming." All prosecutions shall be carried on in the name and by the authority of the State of Wyoming, and conclude "against the peace and dignity of the State of Wyoming."

SEC. 16. No duties shall be imposed by law upon the supreme court or any of the judges thereof, except such as are judicial, nor shall any of the judges thereof exercise any power of appointment except as herein provided.

SEC. 17. The judges of the supreme and district courts shall receive such compensation for their services as may be prescribed by law, which compensation shall not be increased or diminished during the term for which a judge shall have been elected, and the salary of a judge of the supreme or district court shall be as may be prescribed by law.

SEC. 18. Writs of error and appeals may be allowed from the decisions of the district courts to the supreme court, under such regulations as may be prescribed by law.

SEC. 19. Until otherwise provided by law, the State shall be divided into three judicial districts, in each of which there shall be elected at general elections, by the electors thereof, one judge of the district court therein, whose term shall be six (6) years from the first Monday in January succeeding his election and until his successor is duly qualified.

SEC. 20. Until otherwise provided by law, said judicial districts shall be constituted as follows:

District number one shall consist of the counties of Laramie, Converse, and Crook.

District number two shall consist of the counties of Albany, Johnson, and Sheridan.

District number three shall consist of the counties of Carbon, Sweetwater, Uinta, and Fremont.

SEC. 21. The legislature may from time to time increase the number of said judicial districts and judges thereof, but such increase or change in the boundaries of the districts shall not work the removal of any judge from his office during the term for which he may have been elected or appointed; provided the number of districts and district judges shall not exceed four until the taxable valuation of property in the State shall exceed one hundred million dollars (\$100,000,000).

SEC. 22. The legislature shall provide by law for the election of justices of the peace in each organized county within the State. But the number of said justices to be elected in each organized county shall be limited by law to such number as shall be

necessary for the proper administration of justice. The justices of the peace herein provided for shall have concurrent jurisdiction with the district court in all civil actions where the amount in controversy, exclusive of costs, does not exceed two hundred dollars, and they shall have such jurisdiction to hear and determine cases of misdemeanor as may be provided by law, but in no case shall said justices of the peace have jurisdiction when the boundaries of or title to real estate shall come into question.

SEC. 23. Appeals shall lie from the final decisions of justices of the peace and police magistrates in such cases and pursuant to such regulations as may be prescribed by law.

SEC. 24. The time of holding courts in the several counties of a district shall be as prescribed by law, and the legislature shall make provisions for attaching unorganized counties or territory to organized counties for judicial purposes.

SEC. 25. No judge of the supreme or district court shall act as attorney or counselor at law.

SEC. 26. Until the legislature shall provide by law for fixing the terms of courts, the judges of the supreme court and district courts shall fix the terms thereof.

SEC. 27. No judge of the supreme or district court shall be elected or appointed to any other than judicial offices or be eligible thereto during the term for which he was elected or appointed such judge.

SEC. 28. Appeals from decisions of compulsory boards of arbitration shall be allowed to the supreme court of the State, and the manner of taking such appeals shall be prescribed by law.

ARTICLE NO. VI.

SUFFRAGE.

SECTION 1. The rights of citizens of the State of Wyoming to vote and to hold office shall not be denied or abridged on account of sex. Both male and female citizens of this State shall equally enjoy all civil, political, and religious rights and privileges.

SEC. 2. Every citizen of the United States of the age of twenty-one years and upwards, who has resided in the State or Territory one year and in the county wherein such residence is located sixty days next preceding any election, shall be entitled to vote at such election, except as herein otherwise provided.

SEC. 3. Electors shall in all cases, except treason, felony, or breach of the peace, be privileged from arrest on the days of election during their attendance at elections, and going to and returning therefrom.

SEC. 4. No elector shall be obliged to perform militia duty on the day of election, except in time of war or public danger.

SEC. 5. No person shall be deemed a qualified elector of this State, unless such person be a citizen of the United States.

SEC. 6. All idiots, insane persons, and persons convicted of infamous crimes, unless restored to civil rights, are excluded from the elective franchise.

SEC. 7. No elector shall be deemed to have lost his residence in the State by reason of his absence on business of the United States, or of this State, or in the military or naval service of the United States.

SEC. 8. No soldier, seaman, or marine in the Army or Navy of the United States shall be deemed a resident of this State in consequence of his being stationed therein.

SEC. 9. No person shall have the right to vote who shall not be able to read the constitution of this State. The provisions of this section shall not apply to any person prevented by physical disability from complying with its requirements.

SEC. 10. Nothing herein contained shall be construed to deprive any person of the right to vote, who has such right at the time of the adoption of this constitution, unless disqualified by the restrictions of section six of this article. After the expiration of five (5) years from the time of the adoption of this constitution none but citizens of the United States shall have the right to vote.

SEC. 11. All elections shall be by ballot. The legislature shall provide by law that the names of all candidates for the same office to be voted for at any election shall be printed on the same ballot, at public expense, and on election day be delivered to the voters within the polling place by sworn public officials, and only such ballots so delivered shall be received and counted. But no voter shall be deprived of the privilege of writing upon the ballot used the name of any other candidate. All voters shall be guaranteed absolute privacy in the preparation of their ballots, and the secrecy of the ballot shall be made compulsory.

SEC. 12. No person qualified to be an elector of the State of Wyoming shall be allowed to vote at any general or special election hereafter to be holden in the State until he or she shall have registered as a voter according to law, unless the failure to register is caused by sickness or absence, for which provision shall be made by law.

The legislature of the State shall enact such laws as will carry into effect the provisions of this section, which enactment shall be subject to amendment, but shall never be repealed; but this section shall not apply to the first election held under this constitution.

Elections.

SEC. 13. The legislature shall pass laws to secure the purity of elections, and guard against abuses of the elective franchise.

SEC. 14. The legislature shall, by general law, designate the courts by which the several classes of election contests not otherwise provided for shall be tried, and regulate the manner of trial and all matters incident thereto; but no such law shall apply to any contest arising out of an election held before its passage.

SEC. 15. No person except a qualified elector shall be elected or appointed to any civil or military office in the State.

SEC. 16. Every person holding any civil office under the State or any municipality therein shall, unless removed according to law, exercise the duties of such office until his successor is duly qualified, but this shall not apply to members of the legislature, nor to members of any board of assembly, two or more of whom are elected at the same time. The legislature may by law provide for suspending any officer in his functions, pending impeachment or prosecution for misconduct in office.

Qualifications for office.

SEC. 17. All general elections for State and county officers, for members of the house of representatives and the senate of the State of Wyoming, and representatives to the Congress of the United States, shall be held on the Tuesday next following the first Monday in November of each even year. Special elections may be held as now, or as may hereafter be provided by law. All State and county officers elected at a general election shall enter upon their respective duties on the first Monday in January next following the date of their election, or as soon thereafter as may be possible.

SEC. 18. All officers, whose election is not provided for in this constitution, shall be elected or appointed as may be directed by law.

SEC. 19. No member of Congress from this State, nor any person holding or exercising any office or appointment of trust or profit under the United States, shall at the same time hold or exercise any office in this State to which a salary, fees, or perquisites shall be attached. The legislature may by law declare what offices are incompatible.

Oath of office.

SEC. 20. Senators and representatives and all judicial, State, and county officers shall, before entering upon the duties of their respective offices, take and subscribe the following oath or affirmation: "I do solemnly swear (or affirm) that I will support, obey, and defend the Constitution of the United States and the constitution of this State, and that I will discharge the duties of my office with fidelity; that I have not paid or contributed, or promised to pay or contribute, either directly or indirectly, any money or other valuable thing, to procure my nomination or election (or appointment), except for necessary and proper expenses expressly authorized by law; that I have not, knowingly, violated any election law of the State or procured it to be done by others in my behalf; that I will not knowingly receive, directly or indirectly, any money or other valuable thing for the performance or non-performance of any act or duty pertaining to my office, other than the compensation allowed by law."

SEC. 21. The foregoing oath shall be administered by some person authorized to administer oaths, and in the case of State officers and judges of the supreme court shall be filed in the office of the Secretary of State, and in the case of other judicial and county officers in the office of the clerk of the county in which the same is taken; any person refusing to take said oath or affirmation shall forfeit his office, and any person who shall be convicted of having sworn or affirmed falsely, or of having violated said oath or affirmation, shall be guilty of perjury, and be forever disqualified from holding any office of trust or profit within this State. The oath to members of the senate and house of representatives shall be administered by one of the judges of the supreme court or a justice of the peace, in the hall of the house to which the members shall be elected.

ARTICLE NO. VII.

EDUCATION.

SECTION 1. The legislature shall provide for the establishment and maintenance of a complete and uniform system of public instruction, embracing free elementary

schools of every needed kind and grade, a university with such technical and professional departments as the public good may require and the means of the State allow, and such other institutions as may be necessary.

SEC. 2. The following are declared to be perpetual funds for school purposes, of which the annual income only can be appropriated, to wit: Such per centum as has been or may hereafter be granted by Congress on the sale of lands in this State; all moneys arising from the sale or lease of sections number sixteen and thirty-six in each township in the State, and the lands selected or that may be selected in lieu thereof; the proceeds of all lands that have been or may hereafter be granted to this State, where by the terms and conditions of the grant the same are not to be otherwise appropriated; the net proceeds of lands and other property and effects that may come to the State by escheat or forfeiture, or from unclaimed dividends or distributive shares of the estates of deceased persons; all moneys, stocks, bonds, lands, and other property now belonging to the common school fund.

SEC. 3. To the sources of revenue above mentioned shall be added all other grants, gifts, and devises that have been or may hereafter be made to this State and not otherwise appropriated by the terms of the grant, gift, or devise.

SEC. 4. All moneys, stocks, bonds, lands, and other property belonging to a county school fund, except such moneys and property as may be provided by law for current use in aid of public schools, shall belong to and be securely invested and sacredly preserved in the several counties as a county public school fund, the income of which shall be appropriated exclusively to the use and support of free public schools in the several counties of the State.

SEC. 5. All fines and penalties under general laws of the State shall belong to the public school fund of the respective counties, and be paid over to the custodians of such funds for the current support of the public schools therein.

SEC. 6. All funds belonging to the State for public school purposes, the interest and income of which only are to be used, shall be deemed trust funds in the care of the State, which shall keep them for the exclusive benefit of the public schools, and shall make good any losses that may in any manner occur, so that the same shall remain forever inviolate and undiminished. None of such funds shall ever be invested or loaned except on the bonds issued by school districts, or registered county bonds of the State, or State securities of this State or of the United States.

SEC. 7. The income arising from the funds mentioned in the preceding section, together with all the rents of the unsold school lands and such other means as the legislature may provide, shall be exclusively applied to the support of free schools in every county in the State.

SEC. 8. Provision shall be made by general law for the equitable distribution of such income among the several counties according to the number of children of school age in each; which several counties shall in like manner distribute the proportion of said fund by them received respectively to the several school districts embraced therein. But no appropriation shall be made from said fund to any district for the year in which a school has not been maintained for at least three months, nor shall any portion of any public school fund ever be used to support or assist any private school, or any school, academy, seminary, college, or other institution of learning controlled by any church or sectarian organization or religious denomination whatsoever.

SEC. 9. The legislature shall make such further provision by taxation or otherwise, as with the income arising from the general school fund will create and maintain a thorough and efficient system of public schools, adequate to the proper instruction of all the youth of the State between the ages of six and twenty-one years, free of charge; and in view of such provision so made, the legislature shall require that every child of sufficient physical and mental ability shall attend a public school during the period between six and eighteen years for a time equivalent to three years, unless educated by other means.

SEC. 10. In none of the public schools so established and maintained shall distinction or discrimination be made on account of sex, race, or color.

SEC. 11. Neither the legislature nor the superintendent of public instruction shall have power to prescribe text books to be used in the public schools.

SEC. 12. No sectarian instruction, qualifications, or tests shall be imparted, exacted, applied or in any manner tolerated in the schools of any grade or character controlled by the State, nor shall attendance be required at any religious service therein, nor shall any sectarian tenets or doctrines be taught or favored in any public school or institution that may be established under this constitution.

SEC. 13. The governor, secretary of state, state treasurer, and superintendent of public instruction shall constitute the board of land commissioners, which, under direction of the legislature, as limited by this constitution, shall have the direction, control, leasing, and disposal of the lands of the State granted, or which may be hereafter granted, for the support and benefit of public schools, subject to the further limitations that the sale of all lands shall be at public auction, after such delay (not less than the time fixed by Congress), in portions at proper intervals of time, and at

such minimum prices (not less than the minimum fixed by Congress), as to realize the largest possible proceeds.

SEC. 14. The general supervision of the public schools shall be entrusted to the State superintendent of public instruction, whose powers and duties shall be prescribed by law.

The University.

SEC. 15. The establishment of the University of Wyoming is hereby confirmed, and said institution, with its several departments, is hereby declared to be the University of the State of Wyoming. All lands which have been heretofore granted, or which may be granted hereafter by Congress unto the university as such, or in aid of the instruction to be given in any of its departments, with all other grants, donations, or devises for said university, or for any of its departments, shall vest in said university, and be exclusively used for the purposes for which they were granted, donated, or devised. The said lands may be leased on terms approved by the land commissioners, but may not be sold on terms not approved by Congress.

SEC. 16. The university shall be equally open to students of both sexes, irrespective of race or color; and in order that the instruction furnished may be as nearly free as possible, any amount in addition to the income from its grants of lands and other sources above mentioned, necessary to its support and maintenance in a condition of full efficiency, shall be raised by taxation or otherwise, under provisions of the legislature.

SEC. 17. The legislature shall provide by law for the management of the university, its lands and other property by a board of trustees, consisting of not less than seven members, to be appointed by the governor by and with the advice and consent of the senate; and the president of the university, and superintendent of public instruction, as members ex-officio, as such having the right to speak, but not to vote. The duties and powers of the trustees shall be prescribed by law.

Charitable and penal institutions.

SEC. 18. Such charitable, reformatory, and penal institutions as the claims of humanity and the public good may require shall be established and supported by the State in such manner as the legislature may prescribe. They shall be under the general supervision of a State board of charities and reform, whose duties and powers shall be prescribed by law.

SEC. 19. The property of all charitable and penal institutions belonging to the Territory of Wyoming shall, upon the adoption of this constitution, become the property of the State of Wyoming, and such of said institutions as are then in actual operation shall thereafter have the supervision of the board of charities and reform, as provided in the last preceding section of this article, under provisions of the legislature.

Public health and morals.

SEC. 20. As the health and morality of the people are essential to their well-being, and to the peace and permanence of the State, it shall be the duty of the legislature to protect and promote these vital interests by such measures for the encouragement of temperance and virtue, and such restrictions upon vice and immorality of every sort, as are deemed necessary to the public welfare.

Public buildings.

SEC. 21. All public buildings and other property belonging to the Territory shall, upon the adoption of this constitution, become the property of the State of Wyoming.

SEC. 22. The construction, care, and preservation of all public buildings of the State not under the control of the board or officers of public institutions by authority of law shall be intrusted to such officers or boards, and under such regulations as shall be prescribed by law.

SEC. 23. The legislature shall have no power to change or to locate the seat of government, the State university, insane asylum, or State penitentiary, but may, after the expiration of ten (10) years after the adoption of this constitution, provide by law for submitting the question of the permanent location thereof, respectively, to the qualified electors of the State, at some general election, and a majority of all votes upon said question cast at said election shall be necessary to determine the location thereof; but for said period of ten (10) years, and until the same are respectively and permanently located, as herein provided, the location of the seat of government and said institutions shall be as follows:

The seat of government shall be located at the city of Cheyenne, in the county of

Laramie. The State university shall be located at the city of Laramie, in the county of Albany. The insane asylum shall be located at the town of Evanston, in the county of Uinta. The penitentiary shall be located at the city of Rawlins, in the county of Carbon; but the legislature may provide by law that said penitentiary may be converted to other public uses. The legislature shall not locate any other public institutions except under general laws and by vote of the people.

ARTICLE No. VIII.

IRRIGATION AND WATER RIGHTS.

SECTION 1. The water of all natural streams, springs, lakes, or other collection of still water, within the boundaries of the State, are hereby declared to be the property of the State.

SEC. 2. There shall be constituted a board of control, to be composed of the State engineer and superintendents of the water divisions, which shall, under such regulations as may be prescribed by law, have the supervision of the waters of the State and of their appropriation, distribution, and diversion, and of the various officers connected therewith; its decisions to be subject to review by the courts of the State.

SEC. 3. Priority of appropriation for beneficial uses shall give the better right. No appropriation shall be denied except when such denial is demanded by the public interests.

SEC. 4. The legislature shall by law divide the State into four (4) water divisions and provide for the appointment of superintendents thereof.

SEC. 5. There shall be a State engineer, who shall be appointed by the governor of the State and confirmed by the senate; he shall hold his office for the term of six (6) years or until his successor shall have been appointed and shall have qualified. He shall be president of the board of control and shall have general supervision of the waters of the State and of the officers connected with its distribution. No person shall be appointed to this position who has not such theoretical knowledge and such practical experience and skill as shall fit him for the position.

ARTICLE IX.

MINES AND MINING.

SECTION 1. There shall be established and maintained the office of inspector of mines, the duties and salary of which shall be prescribed by law. When said office shall be established the governor shall, with the advice and consent of the senate, appoint thereto a person proven in the manner provided by law to be competent and practical, whose term of office shall be two years.

SEC. 2. The legislature shall provide by law for the proper development, ventilation, drainage, and operation of all mines in this State.

SEC. 3. No boy under the age of fourteen years, and no woman or girl of any age, shall be employed or permitted to be in or about any coal, iron, or other dangerous mines for the purpose of employment therein; provided, however, this provision shall not affect the employment of a boy or female of suitable age in an office or in the performance of clerical work at such mine or colliery.

SEC. 4. For any injury to person or property caused by willful failure to comply with provisions of this article or laws passed in pursuance hereof a right of action shall accrue to the party injured for the damages sustained thereby, and in all cases in this State whenever the death of a person shall be caused by wrongful act, neglect, or default, such as would, if death had not ensued, have entitled the party injured to maintain an action to recover damages in respect thereof, the person who, or the corporation which, would have been liable, if death had not ensued, shall be liable to an action for damages notwithstanding the death of the person injured, and the legislature shall provide by law at its first session for the manner in which the right of action in respect thereto shall be enforced.

SEC. 5. The legislature may provide that the science of mining and metallurgy be taught in one of the institutions of learning under the patronage of the State.

SEC. 6. There shall be a State geologist, who shall be appointed by the governor of the State, with the advice and consent of the senate. He shall hold his office for a term of six (6) years, or until his successor shall have been appointed and shall have qualified. His duties and compensation shall be prescribed by law. No person shall be appointed to this position unless he has such theoretical knowledge and such practical experience and skill as shall fit him for the position; said State geologist shall, ex-officio, perform the duties of inspector of mines until otherwise provided by law.

ARTICLE No. X.

CORPORATIONS.

SECTION 1. The legislature shall be provide for the organization of corporations by general law. All laws relating to corporations may be altered, amended, or repealed by the legislature at any time when necessary for the public good and general welfare, and all corporations doing business in this State may, as to such business, be regulated, limited, or restrained by law, not in conflict with the Constitution of the United States.

SEC. 2. All powers and franchises of corporations are derived from the people, and are granted by their agent, the government, for the public good and general welfare, and the right and duty of the State to control and regulate them for these purposes is hereby declared. The power, rights, and privileges of any and all corporations may be forfeited by willful neglect or abuse thereof. The police power of the State is supreme over all corporations as well as individuals.

SEC. 3. All existing charters, franchises, special or exclusive privileges, under which an actual and bona-fide organization shall not have taken place, for the purpose for which formed, and which shall not have been maintained in good faith to the time of the adoption of this constitution, shall thereafter have no validity.

SEC. 4. No law shall be enacted limiting the amount of damages to be recovered for causing the injury or death of any person. Any contract or agreement with any employé waiving any right to recover damages for causing the death or injury of any employé shall be void.

SEC. 5. No corporation organized under the laws of Wyoming Territory or any other jurisdiction than this State shall be permitted to transact business in this State until it shall have accepted the constitution of this State and filed such acceptance in accordance with the laws thereof.

SEC. 6. No corporation shall have power to engage in more than one general line or department of business, which line of business shall be distinctly specified in its charter of incorporation.

SEC. 7. All corporations engaged in the transportation of persons, property, mineral oils and mineral products, news or intelligence, including railroads, telegraphs, express companies, pipe lines, and telephones, are declared to be common carriers.

SEC. 8. There shall be no consolidation or combination of corporations of any kinds whatever to prevent competition, to control or influence productions or prices thereof, or in any other manner to interfere with the public good and general welfare.

SEC. 9. The right of eminent domain shall never be so abridged or construed as to prevent the legislature from taking the property and franchises of incorporated companies and subjecting them to the public use the same as the property of individuals.

SEC. 10. The legislature shall provide by suitable legislation for the organization of mutual and co-operative associations or corporations.

Railroads.

SECTION 1. Any railroad corporation or association organized for the purpose shall have the right to construct and operate a railroad between any points within this State, and to connect at the State line with railroads of other States. Every railroad shall have the right with its road to intersect, connect with, or cross any other railroad, and all railroads shall receive and transport each other's passengers, and tonnage and cars, loaded or empty, without delay or discrimination.

SEC. 2. Railroad and telegraph lines heretofore constructed or that may hereafter be constructed in this State are hereby declared public highways and common carriers, and as such must be made by law to extend the same equality and impartiality to all who use them, excepting employés and their families and ministers of the Gospel, whether individuals or corporations.

SEC. 3. Every railroad corporation or association operating a line of railroad within this State shall annually make a report to the auditor of State of its business within this State, in such form as the legislature may prescribe.

SEC. 4. Exercise of the power and right of eminent domain shall never be so construed or abridged as to prevent the taking by the legislature of property and franchises of incorporated companies and subjecting them to public use the same as property of individuals.

SEC. 5. Neither the State, nor any county, township, school district, or municipality shall loan or give its credit or make donations to or in aid of any railroad or telegraph line; provided, that this section shall not apply to obligations of any county, city, township, or school district contracted prior to the adoption of this constitution.

SEC. 6. No railroad or other transportation company or telegraph company in existence upon the adoption of this constitution shall derive the benefit of any future legislation without first filing in the office of the secretary of state an acceptance of the provisions of this constitution.

SEC. 7. Any association, corporation, or lessee of the franchises thereof, organized for the purpose, shall have the right to construct and maintain lines of telegraph within this State and to connect the same with other lines.

SEC. 8. No foreign railroad or telegraph line shall do any business within this State without having an agent or agents within each county through which such railroad or telegraph line shall be constructed upon whom process may be served.

SEC. 9. No railroad company shall construct or operate a railroad within 4 miles of any existing town or city without providing a suitable depot or stopping-place at the nearest practicable point for the convenience of said town or city, and stopping all trains doing local business at said stopping place. No railroad company shall deviate from the most direct practicable line in constructing a railroad, for the purpose of avoiding the provisions of this section.

ARTICLE NO. XI.

BOUNDARIES.

SECTION. 1. The boundaries of the State of Wyoming shall be as follows: Commencing at the intersection of the twenty-seventh meridian of longitude west from Washington with the forty-fifth degree of north latitude, and running thence west to the thirty-fourth meridian of west longitude, thence south to the forty-first degree of north latitude, thence east to the twenty-seventh meridian of west longitude, and thence north to place of beginning.

ARTICLE NO. XII.

COUNTY ORGANIZATION.

SECTION 1. The several counties in the Territory of Wyoming as they shall exist at the time of the admission of said Territory as a State, are hereby declared to be the counties of the State of Wyoming.

SEC. 2. The legislature shall provide by general law for organizing new counties, locating the county seats thereof temporarily, and changing county lines. But no new county shall be formed unless it shall contain within the limits thereof property of the valuation of \$2,000,000, as shown by last preceding tax returns, and not then unless the remaining portion of the old county or counties shall each contain property of at least \$3,000,000 of assessable valuation; and no new county shall be organized, nor shall any organized county be so reduced as to contain a population of less than 1,500 bona fide inhabitants, and in case any portion of an organized county or counties is stricken off to form a new county, the new county shall assume and be holden for an equitable proportion of the indebtedness of the county or counties so reduced. No county shall be divided unless a majority of the qualified electors of the Territory proposed to be cut off voting on the proposition shall vote in favor of the division.

SEC. 3. The legislature shall provide by general law for changing county seats in organized counties, but it shall have no power to remove the county seat of any organized county.

SEC. 4. The legislature shall provide by general law for a system of township organization and government, which may be adopted by any county whenever a majority of the citizens thereof voting at a general election shall so determine.

SEC. 5. The legislature shall provide by law for the election of such county officers as may be necessary.

ARTICLE NO. XIII.

MUNICIPAL CORPORATIONS.

SECTION 1. The legislature shall provide by general laws for the organization and classification of municipal corporations. The number of such classes shall not exceed four, and the powers of each class shall be defined by general laws, so that no such corporation shall have any power or be subject to any restrictions other than all corporations of the same class. Cities and towns now existing under special charters or the general laws of the Territory may abandon such charter and reorganize under the general laws of the State.

SEC. 2. No municipal corporation shall be organized without the consent of the

majority of the electors residing within the district proposed to be so incorporated, such consent to be ascertained in the manner and under such regulations as may be prescribed by law.

SEC. 3. The legislature shall restrict the powers of such corporations to levy taxes and assessments, to borrow money, and contract debts, so as to prevent the abuse of such power, and no tax or assessment shall be levied or collected, or debts contracted by municipal corporations, except in pursuance of law for public purposes, specified by law.

SEC. 4. No street passenger railway, telegraph, telephone, or electric-light line shall be constructed within the limits of any municipal organization without the consent of its local authorities.

SEC. 5. Municipal corporations shall have the same right as individuals to acquire rights by prior appropriation and otherwise to the use of water for domestic and municipal purposes, and the legislature shall provide by law for the exercise, upon the part of incorporated cities, towns, and villages, of the right of eminent domain for the purpose of acquiring from prior appropriators, upon the payment of just compensation, such water as may be necessary for the well-being thereof, and for domestic uses.

ARTICLE No. XIV.

SALARIES.

SECTION 1. All State, city, county, town, and school officers (excepting justices of the peace and constables in precincts having less than 1,500 population, and excepting court commissioners, boards of arbitration, and notaries public) shall be paid fixed and definite salaries. The legislature shall, from time to time, fix the amount of such salaries as are not already fixed by this constitution, which shall in all cases be in proportion to the value of the services rendered and the duty performed.

SEC. 2. The legislature shall provide by law the fees which may be demanded by justices of the peace and constables in precincts having less than 1,500 population, and of court commissioners, boards of arbitration, and notaries public, which fees the said officers shall accept as their full compensation. But all other State, county, city, town, and school officers shall be required to keep a true and correct account of all fees collected by them, and to pay the same into the proper treasury when collected, and the officer whose duty it is to collect such fees shall be held responsible under his bond for neglect to collect the same; provided, that in addition to the salary of the sheriff they shall be entitled to receive from the party for whom the services are rendered in civil cases such fees as may be prescribed under the law.

SEC. 3. The salaries of county officers shall be fixed by law within the following limits, to wit: In counties having an assessed valuation not exceeding \$2,000,000, the sheriff shall be paid not more than \$1,500 per year. The county clerk shall not be paid more than \$1,200 per year. The county and prosecuting attorney shall not be paid more than \$1,200 per year. The county treasurer shall not be paid more than \$1,000 per year. The county superintendent of schools shall not be paid more than \$500 per year.

In counties having an assessed valuation of more than \$2,000,000 and not exceeding \$5,000,000, the sheriff shall not be paid more than \$2,000 per year. The county clerk shall not be paid more than \$1,800 per year. The county treasurer shall not be paid more than \$1,800 per year. The county assessor shall not be paid more than \$1,200 per year. The county and prosecuting attorney shall not be paid more than \$1,500 per year. The county superintendent of schools shall not be paid more than \$750 per year.

In counties having more than \$5,000,000 assessed valuation, the sheriff shall not be paid more than \$2,000 per year. The county clerk shall not be paid more than \$2,000 per year. The county treasurer shall not be paid more than \$2,000 per year. The county assessor shall not be paid more than \$1,500 per year. The county and prosecuting attorney shall not be paid more than \$2,500 per year. The county superintendent of schools shall not be paid more than \$1,000 per year. The county surveyor in each county shall receive not to exceed \$8 per day, for each day actually engaged in the performance of the duties of his office.

SEC. 4. The legislature shall provide by general law for such deputies as the public necessities may require, and shall fix their compensation.

SEC. 5. Any county officers performing the duties usually performed by the officers named in this article shall be considered as referred to by section 3 of this article, regardless of the title by which their offices may hereafter be designated.

SEC. 6. Whenever practicable the legislature may, and whenever the same can be done without detriment to the public service shall, consolidate offices in State, county, and municipalities, respectively, and whenever so consolidated the duties of such additional office shall be performed under an *ex officio* title.

ARTICLE XV.

TAXATION AND REVENUE.

SECTION 1. All lands and improvements thereon shall be listed for assessment, valued for taxation, and assessed separately.

SEC. 2. All coal lands in the State from which coal is not being mined shall be listed for assessment, valued for taxation, and assessed according to value.

SEC. 3. All mines and mining claims from which gold, silver, and other precious metals, soda, saline, coal, mineral oil, or other valuable deposit is or may be produced shall be taxed in addition to the surface improvements, and in lieu of taxes on the lands, on the gross product thereof, as may be prescribed by law; provided, that the product of all mines shall be taxed in proportion to the value thereof.

SEC. 4. For State revenue there shall be levied annually a tax not to exceed four mills on the dollar of the assessed valuation of the property in the State except for the support of State educational and charitable institutions. the payment of the State debt and the interest thereon.

SEC. 5. For county revenue there shall be levied annually a tax not to exceed twelve mills on the dollar for all purposes, including general school tax, exclusive of State revenue, except for the payment of its public debt and the interest thereon. An additional tax of two dollars for each person between the ages of twenty-one years and fifty years, inclusive, shall be annually levied for county school purposes.

NO. 6. No incorporated city or town shall levy a tax to exceed eight mills on the dollar in any one year, except for the payment of its public debt and the interest thereon.

SEC. 7. All money belonging to the State, or to any county, city, town, village, or other subdivision therein, except as herein otherwise provided, shall, whenever practicable, be deposited in a national bank or banks, or in a bank or banks incorporated under the laws of this State; provided, that the bank or banks in which such money is deposited shall furnish security to be approved as provided by law, and shall also pay a reasonable rate of interest thereon. Such interest shall accrue to the fund from which it is derived.

SEC. 8. The making of profit, directly or indirectly, out of State, county, city, town, or school-district money or other public fund, or using the same for any purpose not authorized by law, by any public officer, shall be deemed a felony, and shall be punished as provided by law.

SEC. 9. There shall be a State board, composed of the State auditor, treasurer, and secretary of state.

SEC. 10. The duties of the State board shall be as follows: To fix a valuation each year for the assessment of live stock, and to notify the several county boards of equalization of the rate so fixed at least ten (10) days before the day fixed for beginning assessments; to assess at their actual value the franchises, roadway, road-bed, rails, and rolling stock, and all other property used in the operation of all railroads and other common carriers, except machine shops, rolling-mills, and hotels in this State; such assessed valuation shall be apportioned to the counties in which said roads and common carriers are located, as a basis for taxation of such property; provided, that the assessment so made shall not apply to incorporated towns and cities. Said board shall also have power to equalize the valuation on all property in the several counties for the State revenue and such other duties as may be prescribed by law.

SEC. 11. All property, except as in this constitution otherwise provided, shall be uniformly assessed for taxation, and the legislature shall prescribe such regulations as shall secure a just valuation of all property, real and personal.

SEC. 12. The property of the United States, the State, counties, cities, towns, school districts, municipal corporations and public libraries, lots with the buildings thereon used exclusively for religious worship, church parsonages, public cemeteries, shall be exempt from taxation, and such other property as the legislature may by general law provide.

SEC. 13. No tax shall be levied, except in pursuance of law, and every law imposing a tax shall state distinctly the object of the same, to which only it shall be applied.

SEC. 14. The power of taxation shall never be surrendered or suspended by any grant or contract to which the State or any county or other municipal corporation shall be a party.

ARTICLE NO. XVI.

PUBLIC INDEBTEDNESS.

SECTION 1. The State of Wyoming shall not, in any manner, create any indebtedness exceeding one per centum on the assessed value of the taxable property in the

State, as shown by the last general assessment for taxation, preceding; except to suppress insurrection or to provide for the public defense.

SEC. 2. No debt in excess of the taxes for the current year shall in any manner be created in the State of Wyoming, unless the proposition to create such debt shall have been submitted to a vote of the people and by them approved; except to suppress insurrection or to provide for the public defense.

SEC. 3. No county in the State of Wyoming shall in any manner create any indebtedness, excepting two per centum on the assessed value of taxable property in such county, as shown by the last general assessment, preceding; provided, however, that any county, city, town, village, or other subdivision thereof in the State of Wyoming, may bond its public debt existing at the time of the adoption of this constitution, in any sum not exceeding four per centum on the assessed value of the taxable property in such county, city, town, village, or other subdivision, as shown by the last general assessment for taxation.

SEC. 4. No debt in excess of the taxes for the current year shall, in any manner, be created by any county or subdivision thereof, or any city, town, or village, or any subdivision thereof in the State of Wyoming, unless the proposition to create such debt shall have been submitted to a vote of the people thereof and by them approved.

SEC. 5. No city, town, or village, or any subdivision thereof, or any subdivision of any county of the State of Wyoming, shall, in any manner, create any indebtedness exceeding two per centum the assessed value of the taxable property therein; provided, however, that any city, town, or village may be authorized to create an additional indebtedness, not exceeding four per centum on the assessed value of the taxable property therein as shown by the last preceding general assessment, for purpose of building sewerage therein; debts contracted for supplying water to such city or town are excepted from the operation of this section.

SEC. 6. Neither the State nor any county, city, township, town, school district, or any other political subdivision, shall loan or give its credit or make donations to or in aid of any individual, association, or corporation, except for the necessary support of the poor, nor subscribe to or become the owner of the capital stock of any association or corporation. The State shall not engage in any work of internal improvement unless authorized by a two-thirds vote of the people.

SEC. 7. No money shall be paid out of the State treasury except upon appropriation by law and on warrant drawn by the proper officer, and no bills, claims, accounts, or demands against a State, county, or political subdivision, shall be audited, allowed, or paid until a full itemized statement, in writing, verified by affidavit, shall be filed with the officer or officers whose duty it may be to audit the same.

SEC. 8. No bond or evidence of indebtedness of the State shall be valid unless the same shall have endorsed thereon a certificate signed by the auditor and secretary of state that the bond or evidence of debt is issued pursuant to law and is within the debt limit. No bond or evidence of debt of any county, or bond of any township or other political subdivision shall be valid unless the same have endorsed thereon a certificate signed by the county auditor or other officer authorized by law to sign such certificate, stating that said bond or evidence of debt is issued pursuant to law and is within the debt limit.

ARTICLE XVII.

STATE MILITIA.

SECTION 1. The militia of the State shall consist of all able-bodied male citizens of the State, between the ages of eighteen and forty-five years; except such as are exempted by the laws of the United States or of the State. But all such citizens having scruples of conscience averse to bearing arms shall be excused therefrom upon such conditions as shall be prescribed by law.

SEC. 2. The legislature shall provide by law for the enrollment, equipment, and discipline of the militia to conform as nearly as practicable to the regulations for the government of the armies of the United States.

SEC. 3. All militia officers shall be commissioned by the governor, the manner of their selection to be provided by law, and may hold their commissions for such period of time as the legislature may provide.

SEC. 4. No military organization under the laws of the State shall carry any banner or flag representing any sect or society or the flag of any nationality but that of the United States.

SEC. 5. The governor shall be the commander-in-chief of all the militia forces of the State, and shall have power to call out the militia to preserve the public peace, to execute the laws of the State, to suppress insurrection, or repel invasion.

ARTICLE XVIII.

PUBLIC LANDS AND DONATIONS.

SECTION 1. The State of Wyoming hereby agrees to accept the grants of lands heretofore made, or that may hereafter be made, by the United States to the State for educational purposes, for public buildings and institutions, and for other objects, and donations of money, with the conditions and limitations that may be imposed by the act or acts of Congress making such grants or donations. Such lands shall be disposed of only at public auction to the highest responsible bidder, after having been duly appraised by the land commissioners, at not less than three-fourths of the appraised value thereof, and for not less than \$10 per acre; provided, that in case of actual and bona-fide settlement and improvement thereon at the time of the adoption of this constitution, such actual settler shall have the preference right to purchase the land whereon he may have settled, not exceeding 160 acres, at a sum not less than the appraised value thereof, and in making such appraisement the value of improvements shall not be taken into consideration. If, at any time hereafter, the United States shall grant any arid lands in the State to the State, on condition that the State reclaim and dispose of them to actual settlers, the legislature shall be authorized to accept such arid lands on such conditions, or other conditions, if the same are practicable and reasonable.

SEC. 2. The proceeds from the sale and rental of all lands and other property donated, granted, or received, or that may hereafter be donated, granted, or received, from the United States or any other source, shall be inviolably appropriated and applied to the specific purposes specified in the original grant or gifts.

SEC. 3. The governor, superintendent of public instruction, and secretary of State shall constitute a board of land commissioners, who, under such regulations as may be provided by law, shall have the direction, control, disposition, and care of all lands that have been heretofore or may hereafter be granted to the State.

SEC. 4. The legislature shall enact the necessary laws for the sale, disposal, leasing, or care of all lands that have been or may hereafter be granted to the State, and shall, at the earliest practicable period, provide by law for the location and selection of all lands that have been or may hereafter be granted by Congress to the State, and shall pass laws for the suitable keeping, transfer, and disbursement of the land grant funds, and shall require of all officers charged with the same or the safe keeping thereof to give ample bonds for all moneys and funds received by them.

SEC. 5. Except a preference right to buy as in this constitution otherwise provided, no law shall ever be passed by the legislature granting any privileges to persons who may have settled upon any of the school lands granted to the State subsequent to the survey thereof by the General Government, by which the amount to be derived by the sale, or other disposition of such lands, shall be diminished directly or indirectly.

SEC. 6. If any portion of the interest or income of the perpetual school fund be not expended during any year, said portion shall be added to and become a part of the said school fund.

ARTICLE No. XIX.

MISCELLANEOUS.

Live stock.

SECTION 1. The legislature shall pass all necessary laws to provide for the protection of live stock against the introduction or the spread of pleuro-pneumonia, glanders, splenetic or Texas fever, and other infectious or contagious diseases. The legislature shall also establish a system of quarantine, or inspection, and such other regulations as may be necessary for the protection of stock owners, and most conducive to the stock interests within this State.

Concerning labor.

SEC. 1. Eight (8) hours' actual work shall constitute a lawful day's work in all mines and on all State and municipal works.

Labor on public works.

SEC 1. No person not a citizen of the United States, or who has not declared his intentions to become such, shall be employed upon or in connection with any State, county, or municipal works or employment.

SEC. 2. The legislature shall by appropriate legislation see that the provisions of the foregoing section are enforced.

Boards of arbitration.

SEC. 1. The legislature shall establish courts of arbitration, whose duty it shall be to hear and determine all differences and controversies between organizations or

associations of laborers and their employers, which shall be submitted to them in such manner as the legislature may provide.

Police powers.

SEC. 1. No armed police force, or detective agency, or armed body, or unarmed body of men, shall ever be brought into this State, for the suppression of domestic violence, except upon the application of the legislature, or executive when the legislature can not be convened.

Labor contracts.

SEC. 1. It shall be unlawful for any person, company, or corporation, to require of its servants or employes as a condition of their employment, or otherwise, any contract or agreement, whereby such person, company, or corporation shall be released or discharged from liability or responsibility on account of personal injuries received by such servants or employes while in service of such person, company, or corporation, by reason of the negligence of such person, company, or corporation, or the agents or employes thereof, and such contracts shall be absolutely null and void.

Arbitration.

SEC. 1. The legislature may provide by law for the voluntary submission of differences to arbitrators for determination, and said arbitrators shall have such powers and duties as may be prescribed by law, but they shall have no power to render judgment to be obligatory on parties, unless they voluntarily submit their matters of difference and agree to abide the judgment of such arbitrators.

Homesteads.

SEC. 1. A homestead as provided by law shall be exempt from forced sale under any process of law, and shall not be alienated without the joint consent of husband and wife, when that relation exists, but no property shall be exempt from sale for taxes, or for the payment of obligations contracted for the purchase of said premises, or for the erection of improvements thereon.

ARTICLE No. XX.

AMENDMENTS.

SECTION 1. Any amendment or amendments to this constitution may be proposed in either branch of the legislature, and, if the same shall be agreed to by two-thirds of all the members of each of the two houses, voting separately, such proposed amendment or amendments shall, with the yeas and nays thereon, be entered on their journals, and it shall be the duty of the legislature to submit such amendment or amendments to the electors of the State at the next general election, and cause the same to be published without delay for at least twelve (12) consecutive weeks, prior to said election, in at least one newspaper of general circulation, published in each county, and if a majority of the electors shall ratify the same, such amendment or amendments shall become a part of this constitution.

SEC. 2. If two or more amendments are proposed, they shall be submitted in such manner that the electors shall vote for or against each of them separately.

SEC. 3. Whenever two-thirds of the members elected to each branch of the legislature shall deem it necessary to call a convention to revise or amend this constitution, they shall recommend to the electors to vote at the next general election, for or against a convention, and if a majority of all the electors voting at such election shall have voted for a convention, the legislature shall at the next session provide by law for calling the same; and such convention shall consist of a number of members not less than double that of the most numerous branch of the legislature.

SEC. 4. Any constitution adopted by such convention shall have no validity until it has been submitted to and adopted by the people.

ARTICLE No. XXI.

SCHEDULE.

SECTION 1. That no inconvenience may arise from a change of the Territorial government to a permanent State government, it is declared that all writs, actions, prosecutions, claims, liabilities, and obligations against the Territory of Wyoming, of whatever nature, and rights of individuals, and of bodies corporate, shall continue as if no change had taken place in this government, and all process which may, before the organization of the judicial department under this constitution, be issued

under the authority of the Territory of Wyoming, shall be as valid as if issued in the name of the State.

SEC. 2. All property, real and personal, and all moneys, credits, claims, and choses in action, belonging to the Territory of Wyoming at the time of the adoption of this constitution, shall be vested in and become the property of the State of Wyoming.

SEC. 3. All laws now in force in the Territory of Wyoming, which are not repugnant to this constitution, shall remain in force until they expire by their own limitation, or be altered or repealed by the legislature.

SEC. 4. All fines, penalties, forfeitures, and escheats accruing to the Territory of Wyoming shall accrue to the use of the State.

SEC. 5. All recognizances, bonds, obligations, or other undertakings heretofore taken, or which may be taken before the organization of the judicial department under this constitution, shall remain valid, and shall pass over to and may be prosecuted in the name of the State, and all bonds, obligations, or other undertakings executed to this Territory, or to any officer in his official capacity, shall pass over to the proper State authority and to their successors in office, for the uses therein respectively expressed, and may be sued for and recovered accordingly. All criminal prosecutions and penal actions which have arisen or which may arise before the organization of the judicial department under this constitution, and which shall then be pending, may be prosecuted to judgment and execution in the name of the State.

SEC. 6. All officers, civil and military, holding their offices and appointments in this Territory, under the authority of the United States or under the authority of this Territory, shall continue to hold and exercise their respective offices and appointments until suspended under this constitution.

SEC. 7. This constitution shall be submitted for adoption or rejection to a vote of the qualified electors of this Territory, at an election to be held on the first Tuesday in November, A. D. 1889. Said election, as nearly as may be, shall be conducted in all respects in the same manner as provided by the laws of the Territory for general elections, and the returns thereof shall be made to the secretary of said Territory, who, with the governor and chief-justice thereof, or any two of them, shall canvass the same, and if a majority of the legal votes cast shall be for the constitution the governor shall certify the result to the President of the United States, together with a statement of the votes cast thereon and a copy of said constitution, articles, propositions, and ordinances. At the said election the ballots shall be in the following form: "For the Constitution—Yes. No." And as a heading to each of said ballots, shall be printed on each ballot the following instructions to voters: "All persons who desire to vote for the constitution may erase the word 'No.' All persons who desire to vote against the constitution may erase the word 'Yes.'" Any person may have printed or written on his ballot only the words: "For the Constitution" or "Against the Constitution," and such ballots shall be counted for or against the constitution accordingly.

SEC. 8. This constitution shall take effect and be in full force immediately upon the admission of the Territory as a State.

SEC. 9. Immediately upon the admission of the Territory as a State, the governor of the Territory, or in case of his absence or failure to act, the secretary of the Territory, or in the case of his absence or failure to act, the president of this convention shall issue a proclamation, which shall be published and a copy thereof mailed to the chairman of the board of county commissioners of each county, calling an election by the people for all State, district, and other officers, created and made elective by this constitution, and fixing a day for such election, which shall not be less than forty days after the date of such proclamation nor more than ninety days after the admission of the Territory as a State.

SEC. 10. The board of commissioners of the several counties shall thereupon order such election for said day, and shall cause notice thereof to be given, in the manner and for the length of time provided by the laws of the Territory in cases of general elections for Delegate to Congress, and county and other offices. Every qualified elector of the Territory at the date of said election shall be entitled to vote thereat. Said election shall be conducted in all respects in the same manner as provided by the laws of the Territory for general elections, and the returns thereof shall be made to the canvassing board hereinafter provided for.

SEC. 11. The governor, secretary of the Territory, and president of this convention, or a majority of them, shall constitute a board of canvassers to canvass the vote of such election for member of Congress, all State and district officers, and members of the legislature. The said board shall assemble at the seat of government of the Territory on the thirtieth day after the day of such election (or on the following day if such day fall on Sunday) and proceed to canvass the votes for all State and district officers and members of the legislature, in the manner provided by the laws of the Territory for canvassing the vote for Delegate to Congress, and they shall issue certificates of election to the persons found to be elected to said offices, severally, and shall make and file with the secretary of the Territory an abstract, certified by them,

of the number of votes cast for each person for each of said offices, and of the total number of votes cast in each county.

SEC. 12. All officers elected at such election, except members of the legislature, shall within thirty days after they have been declared elected, take the oath required by this constitution, and give the same bond required by the law of the Territory to be given in case of like officers of the Territory or district, and shall thereupon enter upon the duties of their respective offices; but the legislature may require by law all such officers to give other or further bonds as a condition of their continuance in office.

SEC. 13. The governor-elect of the State, immediately upon his qualifying and entering upon the duties of his office, shall issue his proclamation convening the legislature of the State at the seat of government on a day to be named in said proclamation, and which shall not be less than thirty nor more than sixty days after the date of said proclamation. Within ten days after the organization of the legislature, both houses of the legislature, in joint session, shall then and there proceed to elect, as provided by law, two Senators of the United States for the State of Wyoming. At said election the two persons who shall receive the majority of all the votes cast by said senators and representatives shall be elected as such United States Senators, and shall be so declared by the presiding officers of said joint session. The presiding officers of the senate and house shall issue a certificate to each of said Senators certifying his election, which certificates shall also be signed by the governor and attested by the secretary of state.

SEC. 14. The legislature shall pass all necessary laws to carry into effect the provisions of this constitution.

SEC. 15. Whenever any two of the judges of the supreme court of the State, elected under the provisions of this constitution, shall have qualified in their offices the causes then pending in the supreme court of the Territory, and the papers, records, and proceedings of said court, and the seal and other property pertaining thereto, shall pass into the jurisdiction and possession of the supreme court of the State; and until so superceded the supreme court of the Territory and the judges thereof shall continue with like powers and jurisdiction, as if this constitution had not been adopted. Whenever the judge of the district court of any district, elected under the provisions of this constitution, shall have qualified in office, the several causes then pending in the district court of the Territory, within any county in such district, and the records, papers, and proceedings of said district court and the seal and other property pertaining thereto, shall pass into the jurisdiction and possession of the district court of the State for such county; and until the district courts of this Territory shall be superceded in the manner aforesaid, the said district courts and the judges thereof shall continue with the same jurisdiction and power to be exercised in the same judicial districts respectively as heretofore constituted under the laws of the Territory.

SEC. 16. Until otherwise provided by law, the seals now in use in the supreme and district courts of this Territory are hereby declared to be the seals of the supreme and district courts, respectively, of the State.

SEC. 17. Whenever this constitution shall go into effect, records and papers and proceedings of the probate court in each county, and all causes and matters of administration and other matters pending therein, shall pass into the jurisdiction and possession of the district court of the same county, and the said district court shall proceed to final decree or judgment, order, or other determination in the said several matters and causes, as the said probate court might have done if this constitution had not been adopted.

SEC. 18. Senators and members of the house of representatives shall be chosen by the qualified electors of the several senatorial and representative districts, as established in this constitution, until such districts shall be changed by law, and thereafter by the qualified electors of the several districts, as the same shall be established by law.

SEC. 19. All county and precinct officers who may be in office at the time of the adoption of this constitution shall hold their respective offices for the full time for which they may have been elected, and until such time as their successors may be elected and qualified, as may be provided by law, and the official bonds of all such officers shall continue in full force and effect, as though this constitution had not been adopted.

SEC. 20. Members of the legislature and all State officers, district and supreme judges elected at the first election held under this constitution, shall hold their respective offices for the full term next ensuing such election, in addition to the period intervening between the date of their qualification and the commencement of such full term.

SEC. 21. If the first session of the legislature under this constitution shall be concluded within twelve months of the time designated for a regular session thereof, then the next regular session following said special session shall be omitted.

SEC. 22. The first regular election that would otherwise occur following the first session of the legislature, shall be omitted, and all county and precinct officers elected at the first election held under this constitution shall hold their office for the full term thereof commencing at the expiration of the term of the county and precinct officers then in office, or the date of their qualification.

SEC. 23. This convention does hereby declare, on behalf of the people of the Territory of Wyoming, that this constitution has been prepared and submitted to the people of the Territory of Wyoming for their adoption or rejection, with no purpose of setting up or organizing a State government until such time as the Congress of the United States shall enact a law for the admission of the Territory of Wyoming as a State under its provisions.

ORDINANCES.

The following article shall be irrevocable without the consent of the United States and the people of this State :

SECTION 1. The State of Wyoming is an inseparable part of the Federal Union and the Constitution of the United States is the supreme law of the land.

SEC. 2. Perfect toleration of religious sentiment shall be secured, and no inhabitant of this State shall ever be molested in person or property on account of his or her mode of religious worship.

SEC. 3. The people inhabiting this State do agree and declare that they forever disclaim all right and title to the unappropriated public lands lying within the boundaries thereof, and to all lands lying within said limits owned or held by any Indian or Indian tribes, and that until the title thereto shall have been extinguished by the United States, the same shall be and remain subject to the disposition of the United States, and that said Indian lands shall remain under the absolute jurisdiction and control of the Congress of the United States ; that the lands belonging to citizens of the United States residing without this State shall never be taxed at a higher rate than the lands belonging to residents of this State; that no taxes shall be imposed by this State on lands or property therein, belonging to, or which may hereafter be purchased by the United States, or reserved for its use. But nothing in this article shall preclude this State from taxing, as other lands are taxed, any lands owned or held by any Indian who has severed his tribal relations, and has obtained from the United States or from any person, a title thereto, by patent or other grant, save and except such lands as have been or may be granted to any Indian or Indians under any acts of Congress containing a provision exempting the lands thus granted from taxation, which last-mentioned lands shall be exempt from taxation so long, and to such an extent, as is or may be provided in the act of Congress granting the same.

SEC. 4. All debts and liabilities of the Territory of Wyoming shall be assumed and paid by this State.

SEC. 5. The legislature shall make laws for the establishment and maintenance of systems of public schools, which shall be open to all the children of the State and free from sectarian control.

Done in open convention at the city of Cheyenne, in the Territory of Wyoming, this 30th day of September, in the year of our Lord one thousand eight hundred and eighty-nine.

Attest :

JOHN K. JEFFREY,
Secretary.

MELVILLE C. BROWN, *President.*
JOHN K. JEFFREY, *Secretary.*
ASHBURY B. CONAWAY.
A. C. CAMPBELL.
J. A. CASEBEER.
C. D. CLARK.
HENRY A. COFFEEN.
W. E. CHAPLIN.
JONATHAN JONES.
JOHN L. RUSSELL.
GEO. W. FOX.
FRANK M. FOOTE.
CHAS. H. BURKITT.
HENRY S. ELLIOTT.
MORTIMER N. GRANT.
HENRY G. HAY.
FREDERICK H. HARVEY
MARK HOPKINS.
JOHN W. HOYT.
WM. C. IRVINE.

JAMES A. JOHNSTON.
JESSE KNIGHT.
ELLIOTT S. N. MORGAN.
EDWARD J. MORRIS.
JOHN M. McCANDLISH.
HERMAN F. MENOUGH.
CALEB P. ORGAN.
LOUIS J. PALMER.
CHAS. N. POTTER.
D. A. PRESTON.
JOHN A. RINER.
GEO. C. SMITH.
H. E. TESCHEMACHER.
C. L. VAGNER.
GEO. W. BAXTER.
THOS. R. REID.
ROBT. C. BUTLER.
C. W. HOLDEN.
H. G. NICKERSON.
A. L. SUTHERLAND.

PROCLAMATION BY THE GOVERNOR.

Whereas the Constitutional Convention of Wyoming did, on the 30th day of September, 1889, adopt the following resolution:

"Resolved, That the governor of this Territory be requested to issue the executive proclamation calling a special election for the adoption or rejection of the constitution adopted by this convention, to occur at the time in said constitution mentioned:"

Now, therefore, I, Francis E. Warren, governor of the Territory of Wyoming, do issue this, my proclamation, and direct that an election be held throughout the Territory on Tuesday, the fifth day of November, 1889, for the adoption or rejection, by the people, of the constitution proposed by said convention for the State of Wyoming. The said election shall be conducted, the returns thereof made and canvassed, and other proceedings had, as provided in said constitution.

In testimony whereof I have hereunto set my hand and caused the great seal of the Territory to be hereto affixed.

Done at the city of Cheyenne, this fourth day of October, eighteen hundred and eighty-nine.

[SEAL.]

FRANCIS E. WARREN.

By the Governor:

JOHN W. MELDRUM,
Secretary of Territory.

AN ADDRESS TO THE PEOPLE.

The convention convened at Cheyenne on September 2, 1889, to frame a constitution for the State of Wyoming, has completed its labors.

The constitution so framed will be submitted to you for adoption or rejection on November 5, 1889.

The convention designated the undersigned as a committee to lay before the people of the Territory reasons why the foregoing constitution should be adopted.

Our space is limited, and in this address we can only call your attention to a few of the many good reasons that exist.

Every county in the Territory was represented in the convention. A month's time of careful, conscientious, and painstaking labor has been spent in formulating this constitution. In all our deliberations we have endeavored to embody in our fundamental law such economic measures as we believed would commend our work to the people of the whole Territory, without reference to partisan politics, and with equal protection for the rich and poor.

TERRITORIAL GOVERNMENT.

For twenty years and more Wyoming has been laboring under the disadvantages of a Territorial form of government. These disadvantages are numerous. We have no voice in the selection of the most important officers who administer our local affairs; no voice in the enactment of laws by Congress, to which we must yield obedience, and no voice in the election of the Chief Magistrate of the Republic, who appoints the principal officers by whom the executive and judicial affairs of our Territory are administered. It has been well said: "A Territory can not have a settled public policy. The fact that Congress may at any time annul its legislation on any matter of purely local concern prevents active co-operation by the people on those higher planes of public life which result in the establishment of a permanent State policy." The abuse of the veto power by alien governors, the lack of familiarity of alien judges with our laws, and the frequent changes of our executive and judicial officers, as it has been in the past and may be again in the future, can not but discourage the people. Although citizens of the United States in name, we have, in fact, been disfranchised. Territorial representation in Congress is a delusion—the Territories of these United States have no representation. Taxation without representation, a condition in many respects allied to colonial vassalage, with the many other wrongs that follow the application of those two anti-American ideas, and with which you are familiar, have all united to render the condition of the people of Wyoming—the most energetic, intelligent, and patriotic citizens of the United States—well nigh intolerable.

We have endured all those things up to the present time without a murmur of discontent because we have not heretofore seen our way clear to throw off those chains of political and industrial bondage, and to ask, with hope of success, our ad-

mission into the Federal Union, where we could enjoy equally with sister States the right of local self-government and those other natural and inalienable rights guaranteed in the Constitution to every man. The residents of Wyoming are the descendants of free citizens, such as framed the Constitution of the United States. The loyalty of the sons to republican institutions and their love of liberty have not been decreased but increased by the hardships and dangers that have been endured and by the difficulties that have been encountered and overcome in laying the foundation. It is admitted that Wyoming Territory stands next in order in its right to admission into the Union. We believe she is now ready to assume the responsibility of statehood—to cast off the burdens and inconveniences of Territorial vassalage. She can now ask for admission with hope of success. Her time has arrived. For the first time in ten years public opinion in the older States has so changed as to view the admission of new States with a fair degree of favor. If not admitted at this time, we may reasonably expect the wave of public sentiment will soon recede and the old unfavorable attitude toward the Territories will be again established. In this event our admission as a State would become so problematical that we need entertain no hope of obtaining the rights and benefits of statehood for the next ten years.

While the cost of State government is increased over the Territorial government in some departments, the savings in other departments, the retrenchment in other directions, the increase of population and assessable property that will follow our admission as a State will in a short time materially lessen the burdens of taxation, while to delay our application for admission until the “swing of the pendulum” of public opinion has reached the opposite position from that so favorable now to the formation of new States will be to fasten upon us for a long term of years all the abuses of financial management that have made our taxation burdensome and made plethoric the pockets of public officials at the expense of the tax-payer.

PUBLIC LANDS.

By the terms of the Senate bill for the admission of Wyoming there are donated to the State the following public lands :

	Acres.
Agricultural college lands	90,000
Scientific school lands.....	100,000
Normal school lands.....	100,000
For charitable and penal institutions	300,000
For public buildings	32,000
Total	622,000

In addition to these lands the State is authorized to select, in lieu of sections 16 and 36 in each township found to be mineral lands, an equal amount of agricultural lands. It is believed that at least 500,000 acres of these lands will be found to be mineral. This would give the State of Wyoming available agricultural lands to be selected at once upon her admission, to the extent of 1,122,000 acres. If statehood should from any cause be delayed for the next ten or fifteen years, the choice agricultural lands within the limits of the State will have been disposed of, and the donations of the lands to the State would thereby be rendered of less value. There is also donated to the State for the support of her public schools 5 per cent. of the proceeds of all public lands sold by the United States after our admission as a State. This fund alone would average not less than \$20,000 a year, and a delay of ten years in our admission would entail a loss from this source alone of \$200,000. The lands donated and selected, if leased at 5 cents an acre per annum, would produce in ten years a revenue of \$561,000. It thus appears that delay of statehood means for us a loss in ten years from these two sources of \$761,000, or \$76,000 per annum.

THE CONVENTION AND THE CONSTITUTION.

The delegates in this convention came from both political parties from all sections of the Territory. It was non-partisan in character; indeed it may be truthfully said that in its deliberations there was at no time a division of its membership on party lines. Sectional questions were at no time considered, but to act for the common good of the whole people of Wyoming seemed to be the ruling motive. The material, industrial, and professional interests were represented in its membership, and no outside influences were permitted to affect their action.

The constitution adopted is believed to be fairly conservative and also progressive. It is the first constitution adopted by man which gives to each citizen the same rights guaranteed to every other citizen. Under its provisions pure elections are practically guaranteed, and economy of administration assured. Restrictions upon legislation

and loose appropriations of public moneys are clear and positive. The salaries of officers have been fixed according to the value of the service rendered and in proportion to the means of the people to pay. Public trusts are carefully controlled and corporations restricted to a single line of business. The establishment of compulsory courts of arbitration to settle disputes between corporations and their employes, the protection of laborers in mines, the prohibition of the importation of foreign police to usurp local authority are all measures that commend themselves, and in the convention received the support of the representatives of both capital and labor. The extravagance in the management of county affairs that has prevailed in the past has been circumscribed and rendered impossible. The restrictions upon taxation and the creation of public debts are such as to necessitate economy in public affairs and insure to the people the highest excellence in government for the least money.

In the interest of local self-government, to promote the general good, and to encourage the future growth and development of the State of Wyoming, the constitutional convention having finished its work, respectfully solicits your candid consideration of the constitution herewith submitted and ratification of the same by your suffrages.

M. C. BROWN,
C. H. BURRITT,
H. G. HAY,
M. N. GRANT,
JESSE KNIGHT,
G. C. SMITH,

C. P. ORGAN,
H. A. COFFEEN,
D. A. PRESTON,
MARK HOPKINS,
F. H. HARVEY,
Committee.

REPORT OF THE MARITIME CANAL COMPANY OF NICARAGUA.

To the honorable Secretary of the Interior :

Pursuant to Section six of the act of Congress, entitled "An Act to incorporate The Maritime Canal Company of Nicaragua," approved February 20th, 1889, which provides that said company shall make a report on the first Monday of December in each year to the Secretary of the Interior, and in accordance with the instructions received from you prescribing the form of such report and the particulars to be given thereby, and by the express authority of the said company, we, the undersigned, Hiram Hitchcock, president, and Thomas B. Atkins, secretary of the said The Maritime Canal Company, of Nicaragua, do hereby make the following report on behalf of the said company, and do certify and declare as follows :

First. That a meeting of the incorporation named in the said act of Congress was held on the seventh day of March, 1889, pursuant to call, at No. 36 Wall street, in the city of New York, when the charter granted by Congress was unanimously accepted, and a communication to that effect forwarded to the Secretary of State. That at the same meeting Messrs. Hiram Hitchcock, Horace L. Hotchkiss, Francis A. Stout, R. A. Lancaster, and A. C. Cheney were chosen by a majority of the number from those named in the aforesaid act as the five incorporators empowered by said charter to open books of subscription to the capital stock of the company and to receive subscriptions for the same.

Second. That the said committee of incorporators gave thirty days' notice of the time and place of the opening of the books of subscription to the capital stock of the said company by publication in one daily newspaper in New York City and one newspaper in Managua, Nicaragua, and one in San Jose, Costa Rica, and that, pursuant to such notice, the said books of subscription were duly opened, on the 22nd day of April, 1889, at number 44 Broadway, in the city of New York.

Third. That a meeting of the subscribers to the said capital stock was held on the second day of May, 1889, pursuant to notice, at number 44 Wall street, in the city of New York, and at such meeting the following board of fifteen directors was duly elected by the stockholders of said company in the manner provided for in the said act of incorporation, to serve for the periods set opposite their respective names, to wit :

Charles P. Daly, Frederick Billings, Daniel Ammen, Horace L. Hotchkiss, Joseph E. MacDonald, to serve for three years.

Francis A. Stout, Alfred B. Darling, Franklin Fairbanks, C. Ridgeley Goodwin, Alexander T. Mason, to serve for two years.

Joseph Bryan, James Roosevelt, Hiram Hitchcock, Horatio Guzman, Pedro Perez Zeledon, to serve for one year.

That a majority of the above-named directors are citizens and residents of the United States, and that all of them are stockholders in the Maritime Canal Company of Nicaragua.

Fourth. That on the fourth day of May, 1889, a meeting of the directors, elected as aforesaid, was held pursuant to notice, at number 44 Wall street, in the city of New York, and at such meeting by-laws were adopted, and the following officers were elected for the ensuing year, to wit:

President, Hiram Hitchcock.

Vice-President, Charles P. Daly.

Secretary and treasurer, Thomas B. Atkins.

That all of the officers so elected are citizens and residents of the United States.

Fifth. That in accordance with the provisions of said act of incorporation, the principal office of The Maritime Canal Company of Nicaragua has been established in the city of New York, at number 44 Wall street.

Sixth. That the Maritime Canal Company of Nicaragua has completed the axial surveys and final plans of the proposed interoceanic canal, and the same have been officially approved by the Government of Nicaragua. That on the third day of June, 1889, the company began the preliminary work of construction at Greytown, and on the eighth day of October following commenced the work of excavation. That the Government of the Republic of Nicaragua has officially recognized and declared by decree that the construction of the canal was formally commenced, in accordance with the terms of the concession, on the said 8th day of October, 1889.

That since the said third day of June, 1889, the company has established permanent headquarters at Greytown, erected store-houses, hospitals, dwellings, and other buildings, constructed several miles of aqueduct, cleared parts of the San Juan and Deseado rivers, laid several miles of broad-gauge railroad, constructed about thirty-five miles of telegraph line, and cleared the first part of the route of the canal. That it has shipped to Greytown and landed at that port large quantities of machinery, tools, lumber, piles, boats, and other materials necessary for the establishment of the plant to be used in the construction of the said canal. That, in addition to the above, the company has organized in Nicaragua a complete hospital service and ambulance corps, and has perfected the sanitary arrangements in and about its camps and headquarters.

Seventh. That during the coming winter the work of railroad and telegraphic construction will be continued and prosecuted with energy, the building of a breakwater for the Atlantic port of the canal will be commenced, and the dredging work will be pushed forward with all possible dispatch. That several large dredges have recently been contracted for, and other contracts relating to the construction of the canal are now in course of negotiation with responsible contractors, and it is expected they will be closed at an early date.

Eighth. That ten thousand one hundred and forty-five shares of the capital stock of The Maritime Canal Company of Nicaragua have already been subscribed for at par, amounting in the aggregate to the sum of one million fourteen thousand five hundred dollars (\$1,014,500), of which amount six hundred and one thousand four hundred and fifty (\$601,450) dollars have been paid into the treasury of the company in cash. That the other assets of the company consist at present of the

property, rights, privileges, and franchises now owned by it in Nicaragua and New York.

Ninth. That since the third day of June, 1889, the company has expended upon the work carried on in Nicaragua more than five hundred thousand (\$500,000) dollars, and that its liabilities, which consist chiefly of expenditures incurred during the month of November, do not exceed the sum of fifty thousand (\$50,000) dollars.

Tenth. That the details of the work to be done on the canal are briefly as follows: The construction of a breakwater at or near Greytown on the Caribbean Sea, and dredging thence to the westward ten miles through alluvial ground to the place where a lock of thirty-one feet lift will be built. At two miles beyond will be constructed a second lock or double lock of the combined lift of seventy-five feet, and a dam across the small stream Deseado, above which will be a basin affording four and one-quarter miles of free navigation; then a rock cut about two and three-quarter miles in length, followed by twelve miles of free navigation in the valleys of two small rivers, the San Francisco and the Machado. Here the waters will be raised by dams and embankments so as to form basins, which will connect directly with the San Juan River above a large dam to be built across that river. Said dam will raise the waters in the river and lake and secure additional free navigation of sixty-four miles in the river and fifty-six and one-half miles across the lake. On the western side of the lake the canal will enter a cut of slight depth in the earth and rock of nine miles in length, issuing thence into the Tola basin, with five and one-half miles of free navigation, which will be obtained by damming the Rio Grande. At this dam a series of locks will lower the level eighty-five feet, and the canal will proceed in excavation down the valley of the Rio Grande a distance of two miles to the last lock, a tidal lock of twenty to thirty feet lift, below which the canal will enter the upper portion of the harbor of Brito, one and one-half miles from the Pacific.

In witness whereof we have hereunto set our hands this second day of December, in the year of our Lord one thousand eight hundred and eighty-nine, and affixed hereto the corporate seal of said company.

HIRAM HITCHCOCK,
President.

[Seal of Maritime Canal Company of Nicaragua.]

THOS. B. ATKINS,
Secretary.

STATE OF NEW YORK,

City and County of New York, ss:

Hiram Hitchcock, being duly sworn, says: That he is the president of said The Maritime Canal Company of Nicaragua; that he has read the foregoing annual report and knows the contents thereof, and that the same is in all respects correct and true.

HIRAM HITCHCOCK,
President.

Sworn to before me this 2nd day of December, 1889.

[Notarial seal.]

NESTOR PONCE DE LEON,
Notary Public, N. T. C., 25.

STATE OF NEW YORK,

City and County of New York, ss:

Thomas B. Atkins, being duly sworn, says: That he is the secretary of said The Maritime Canal Company of Nicaragua; that he has read the foregoing annual report and knows the contents thereof, and that the same is in all respects correct and true.

THOS. B. ATKINS.

Sworn to before me this 2nd day of December, 1889.

[Notarial seal.]

NESTOR PONCE DE LEON,

Notary Public, N. T. C., 22.

STATE OF NEW YORK,

City and County of New York, ss:

On the second day of December, in the year 1889, before me personally came Thomas B. Atkins, known to me to be the secretary of The Maritime Canal Company of Nicaragua, and with whom I am personally acquainted, who being by me duly sworn, did depose and say: that he resided in the city of New York; that he was the secretary of The Maritime Canal Company of Nicaragua; that he knew the corporate seal of said company; that the seal affixed to the foregoing report was such corporate seal; that it was so affixed by order of the board of directors of the said company, and that he signed his name thereto by the like order as secretary of the said company.

And the said Thomas B. Atkins further said that he was acquainted with Hiram Hitchcock and knew him to be the president of said company; that the signature of the said Hiram Hitchcock subscribed to the said instrument was in the genuine handwriting of the said Hiram Hitchcock. and was thereto subscribed by the like order of the said Board of Directors, and in the presence of him the said Thomas B. Atkins.

In witness whereof I have hereunto set my hand and official seal this second day of December, A. D. 1889.

[Notarial seal.]

NESTOR PONCE DE LEON,

Notary Public, N. T. C., 25.

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